# Midwater Trawl Tows and Catches Made on *C.G.S. G.B. Reed* Cruise GBR81-3, *M/V Howe Bay* Cruise HB81-1, and *M/V Marwood* Cruise MW81-1 off the Southwest Coast of Vancouver Island March 9-27, 1981

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# MIDWATER TRAWL TOWS AND CATCHES MADE ON C.G.S. G. B. REED CRUISE GBR81-3, M/V HOWE BAY CRUISE HB81-1, AND M/V MARWOOD CRUISE MW81-1 OFF THE SOUTHWEST COAST OF VANCOUVER ISLAND MARCH 9-27, 1981.

by

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## ABSTRACT

McCarter, P. B., L. W. Barner, and F. H. C. Taylor. 1982. Midwater trawl tows and catches made on C.G.S. G. B. REED Cruise GBR81-3, M/V HOWE BAY Cruise HB81-1, and M/V MARWOOD Cruise MW81-1 off the southwest coast of Vancouver Island March 9-27, 1981. Can. Data Rep. Fish. Aquat. Sci. No. 352: iii + 113 p.

Fishing positions, catches and biological sampling data are presented from the March 9-27, 1981 herring survey off the southwest coast of Vancouver Island. Midwater tows were made by the G. B. REED, HOWE BAY and MARWOOD to confirm the identity of major schools of fish detected and quantified by hydroacoustic surveying.

Key words: catch composition, herring survey, southwest Vancouver Island.

## RÉSUMÉ

McCarter, P. B., L. W. Barner, and F. H. C. Taylor. 1982. Midwater trawl tows and catches made on C.G.S. G. B. REED Cruise GBR81-3, M/V HOWE BAY Cruise HB81-1, and M/V MARWOOD Cruise MW81-1 off the southwest coast of Vancouver Island March 9-27, 1981. Can. Data Rep. Fish. Aquat. Sci. No. 352: iii + 113 p.

Le présent rapport expose les données sur l'échantillonnage biologique, sur les prises et sur les emplacements de pêche provenant d'une étude sur le hareng menée au large de la côte sud-ouest de l'île Vancouver du 9 au 27 mars 1981. Le G.B. REED, le HOWE BAY et le MARWOOD one effectué des traits du chalut mésopélagique afin de confirmer l'identité des principaux bancs de poissons détectés et quantifiés lors de levés hydroacoustiques.

Mots-clés: composition des prises, étude sur le hareng, sud-ouest de l'Île Vancouver.

## INTRODUCTION

In 1980-81 three surveys were completed to estimate hydroacoustically the distribution and abundance of lower west coast of Vancouver Island and Strait of Georgia herring stocks. The first survey was conducted off the lower west coast September 9-27, 1980 when it was believed prospective spawning stocks were schooling in the area. The second survey covered the Strait of Georgia and the lower west coast, November 3-21, 1980, when stocks were expected to be migrating toward their respective spawning grounds. The third survey, March 9-27, 1981, monitored offshore, spent herring and those spawning in Barkley and Clayoquot sounds and is the subject of this report.

All three hydroacoustic surveys were carried out by the C.G.S. G.B. REED. Concurrent fishing operations were conducted by the chartered trawlers M/V EASTWARD HO, OCEAN KING, M/V HOWE BAY, and M/V MARWOOD to determine species compositions of fish schools and to collect sampling data. The M/V EASTWARD HO cruise in the Strait of Georgia and the M/V HOWE BAY cruise in Barkley/Clayoquot combined hydroacoustic and fishing functions. Barner et al. (1981) have published the catches made during the first two surveys. This report documents the third survey and records catches of the M/V HOWE BAY cruise HB81-1, M/V MARWOOD cruise MW81-1 and the C.G.S. G.B. REED cruise 81-3 March 9-27, 1981. The results of the hydroacoustic surveys will be the subjet of later reports.

## STUDY AREA

Echo sounding and trawl sampling took place over banks and gullies seaward to the 100-150 fm edge from Estevan Point on Vancouver Island, southward to James Island on the U.S. coastline. Offshore sounding was carried out at 9 kn by the C.G.S. G.B. REED along a grid of tracklines 2-4 mi apart (Fig. 1). Inshore inlets and channels were investigated by the M/V HOWE BAY. Midwater tows were made to identify the major species of fish in the main sound scattering layers (Fig. 2 and 3).

## SAMPLING METHODS

A summary of vessel and equipment characteristics is contained in Table 1. Catches from most tows were brought aboard, sorted by species into tubs and weighed. Large hauls that could not be brought aboard were estimated. Species weights were determined by averaging the weights of 3-6 randomly selected tubs of a species and multiplying by the total tub count of that species. Fish destined for laboratory sampling were frozen in bags or boxes, while larger species were sampled onboard. Table 2 presents a summary of species sampled.

Twenty-three hundred and twenty-three herring were measured from various localities and 1,986 scales were removed for age determination (Appendix Table 7). Many herring could not be aged due to absent or regenerate scales. Length-sex frequencies by tow are presented in Appendix Table 1 and length at maturity compositions by locality and date are in Appendix Table 5.

Five hundred and five pollock were measured from two localities and 257 pectoral fins were removed for age determination. One thousand and forty-four hake and 326 widow rockfish were also measured and length-sex frequencies are located in Appendix Tables 2, 3, and 4. Herring were measured to the nearest millimeter (standard length) while other fish were measured to the nearest centimeter (fork length). Herring maturity stages are classified according to the descriptions in Appendix Table 10.

## CATCH COMPOSITION

Sixty midwater tows were made by the three survey vessels. Catch compositions are presented in Tables 5a, 5b, and 5c. Bridge log data can be found in Tables 6a, 6b, and 6c. Table 3 contains a list of scientific and common names of species captured.

Spiny dogfish dominated the total catch, accounting for 44,968 kg or 83% by weight (Table 4). Dogfish occurred in 28 hauls but were dominant in only seven, with 91% of the catch being caught in two tows on Finger Bank. Hake ranked second, accounting for 3,480 kg or 6% by weight and were present in seven hauls. The hake catches were made in Sydney Inlet, Millar Channel and Trevor Channel. Only trace amounts were caught offshore. Herring ranked third accounting for 2,762 kg or 5% and were present in 45 of the 60 tows. The largest catches occurred when the footrope was less than 10 m off the bottom. These catches were made on the Swiftsure Bank and along the outer edge of the continental shelf.

## TAG RECOVERIES

One tagged herring (no. 178652) was recovered from Juan de Fuca Trench in tow 13 of the G. B. REED, March 26, 1981 (Fig. 2). This specimen had been tagged and released 16 days earlier at Comox Bar, a minimum travelled distance of 240 mi or an average 15 mi per day.

## BIOLOGICAL SAMPLING

### POLLOCK

The pollock length frequency distribution (Appendix Table 2) shows three modes, one at 26 cm, another at 32 cm and the other at 39 cm. The 26-cm mode was the result of a sample from off Point San Juan. The larger fish occurred in Barkley Basin.

### HAKE

Three hake samples were obtained. A sample from Sydney Inlet and from the upper part of Millar Channel had modes at 32-33 cm. The sample from the southern part of Millar Channel contained bigger fish, with a mode at 46 cm.

### ROCKFISH

Widow rockfish were sampled from Nitinat Canyon and Swiftsure Bank. The sample from Nitinat Canyon showed modes at 42-44 cm and at 51 cm; the Swiftsure sample consisted of smaller fish with modes at 35 and 38 cm.

### HERRING

#### Maturity

The proportion of spent herring increased and the proportion of immature herring decreased in several localities sampled more than once a few days apart (Appendix Table 5). These changes suggest that spent herring were moving offshore rapidly from mid-March onwards.

Most herring sampled were spent or recovering (maturity stages 7 and 8); a few mainly from the outer edge of the shelf south of Nitinat Canyon were mature but unspawned (maturity stage 5) and 12% were immature stages 1 and 2 (Appendix Table 6).

#### Age at maturity

Ninety-nine percent of the herring that were immature and had not spawned (maturity stage 1) were age 2. Only a few of the age 3 and older herring were in this stage. The maturity at age composition (Appendix Table 8 suggests that herring mature for the first time at age 2 and that almost all herring age 3 and over would spawn or had spawned this season.

## ACKNOWLEDGEMENTS

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Table 1. Vessel and gear characteristics.

| Vessel | G.B. REED | HOWE BAY | MARWOOD |
|---|---|---|---|
| Length | 176'<br>54 m | 92'<br>28 m | 128'<br>39 m |
| Horsepower | 1,000 | 674 | 750 |
| Trawl doors Süberkrüb | 3 m2 | 5 m2 | 7 $m^2$ |
| Sweepline length (fm) | 40 fm | 35 fm | 50 fm |
| Midwater trawl type | 434 Engel | Box MWT | Canadian Diamond #8 |
| Average trawl opening (m) | 11 m | 15 m | 17 m |
| Codend effective mesh size (in) | double 1-1/2" mesh 1" liner | 1-1/4" 1" liner | 3-1/2" mesh with 1" liner |
| Bottom sounders | Simrad | Simrad | Elac, simrad |
| Net sounder | Elac, cable type | Furuno, cableless | Furuno, cableless |

Table 2. Summary of species sampled, type of sample and number of specimens examined from G. B. REED Cruise GBR81-3, MARWOOD Cruise MW81-1, and HOWE BAY Cruise HB81-1, March 9-27, 1981.

| Species | Tow no. | Vessel and midwater gear | No. measured | Sex | | | Maturity sample | Age | Sampling remarks |
|---|---|---|---|---|---|---|---|---|---|
| | | | | M | F | U | | | |
| Herring | 1 | GBR 434E | 100 | 49 | 49 | 2 | 100 | 80 | Random subsample |
| | 3 | GBR 434E | 100 | 34 | 66 | - | 100 | 92 | Random subsample |
| | 6 | GBR 434E | 200 | 107 | 93 | - | 200 | 196 | Random subsample |
| | 7 | GBR 434E | 100 | 50 | 50 | - | 100 | 98 | Random subsample |
| | 8 | GBR 434E | 100 | 42 | 58 | - | 100 | 98 | Random subsample |
| | 9 | GBR 434E | 100 | 33 | 67 | - | 100 | 100 | Random subsample |
| | 10 | GBR 434E | 100 | 30 | 70 | - | 100 | 100 | Random subsample |
| | 11 | GBR 434E | 100 | 35 | 65 | - | 100 | 100 | Random subsample |
| | 12 | GBR 434E | 100 | 45 | 55 | - | 100 | 89 | Random subsample |
| | 13 | GBR 434E | 100 | 30 | 70 | - | 100 | 97 | Random subsample |
| | 14 | GBR 434E | 100 | 30 | 70 | - | 100 | 98 | Random subsample |
| | 2 | MW D-8 | 38 | 15 | 23 | - | 38 | 38 | Total sample |
| | 3 | MW D-8 | 25 | 11 | 14 | - | 25 | 25 | Total sample |
| | 4 | MW D-8 | 100 | 41 | 53 | 6 | 100 | 0 | Random subsample |
| | 14 | MW D-8 | 23 | 9 | 14 | - | 23 | 23 | Total sample |
| | 15 | MW D-8 | 75 | 23 | 49 | 3 | 75 | 62 | Total sample |
| | 16 | MW D-8 | 100 | 37 | 63 | - | 100 | 80 | Random subsample |
| | 17 | MW D-8 | 63 | 20 | 43 | - | 63 | 33 | Total sample |
| | 18 | MW D-8 | 100 | 48 | 52 | - | 100 | 98 | Random subsample |
| | 20 | MW D-8 | 100 | 34 | 66 | - | 100 | 97 | Random subsample |
| | 27 | MW D-8 | 12 | 8 | 4 | - | 12 | 12 | Total sample |
| | 9 | HB $B_x$.MWT | 100 | 41 | 59 | - | 100 | 98 | Random subsample |
| | 10 | HB $B_x$.MWT | 90 | 39 | 51 | - | 90 | 81 | Total sample |
| | 11 | HB $B_x$.MWT | 100 | 43 | 57 | - | 100 | 0 | Random subsample |
| | 12 | HB $B_x$.MWT | 17 | 7 | 10 | - | 17 | 13 | Total sample |
| | 15 | HB $B_x$.MWT | 100 | 47 | 53 | - | 100 | 99 | Random subsample |
| | 16 | HB $B_x$.MWT | 80 | 40 | 40 | - | 80 | 79 | Total sample |
| Total | 27 | | 2,323 | 948 | 1,364 | 11 | 2,323 | 1,986 | |

Table 2 (cont'd)

| Species | Tow no. | Vessel and midwater gear | No. measured | Sex | | | Maturity sample | Age | Sampling remarks |
|---|---|---|---|---|---|---|---|---|---|
| | | | | M | F | U | | | |
| Pollock | 2 | MW D-8 | 90 | 36 | 54 | - | 90 | - | Total sample |
| | 9 | MW D-8 | 158 | - | - | - | 158 | - | Total sample |
| | 7 | HB B .MWT | 257 | 44 | 213 | - | 257 | 257 | Random subsample, fin |
| Total | 3 | | 505 | 80 | 267 | - | 505 | 257 | |
| Hake | 1 | HB MWT | 525 | 331 | 194 | - | - | - | Random subsample |
| | 3 | HB MWT | 390 | 119 | 271 | - | - | - | Random subsample |
| | 4 | HB MWT | 129 | 19 | 110 | - | - | - | Random subsample |
| Total | 3 | | 1,044 | 469 | 575 | - | - | - | |
| S. entomelas | 5 | MW D-8 | 184 | 79 | 105 | - | 184 | - | Total sample |
| | 20 | MW D-8 | 142 | 86 | 56 | - | 142 | - | Total sample |
| Total | 2 | | 326 | 165 | 161 | - | 326 | - | |

434E = 434 Engel midwater trawl.
D-8 = Canadian diamond 8 midwater trawl.
B .MWT = Box midwater trawl.

Table 3. Scientific and common names[1] of species captured.

| Common name | Scientific name |
|---|---|
| Scupfin shark | *Galeorhinus zyopterus* |
| Spiny dogfish | *Squalus acanthias* |
| Big skate | *Raja binoculata* |
| Pacific herring | *Clupea harengus pallasi* |
| Northern anchovy | *Engraulis mordax mordax* |
| Coho salmon | *Oncorhynchus kisutch* |
| Chinook salmon | *Oncorhynchus tshawytscha* |
| Eulachon | *Thaleichthys pacificus* |
| Eared blacksmelt | *Bathylagus ochotensis* |
| Ribbon barracudina | *Notolepis rissoi rissoi* |
| California headlightfish | *Diaphus theta* |
| Pacific cod | *Gadus macrocephalus* |
| Walleye pollock | *Theragra chalcogramma* |
| King-of-the-salmon | *Trachipterus altivelis* |
| Medusa fish | *Icichthys lockingtoni* |
| Widow rockfish | *Sebastes entomelas* |
| Yellowtail rockfish | *Sebastes flavidus* |
| Bocaccio rockfish | *Sebastes paucispinis* |
| Redstripe rockfish | *Sebastes proriger* |
| Lingcod | *Ophiodon elongatus* |

[1]After Hart (1973).

Table 4. Total catch by principal species, G. B. REED Cruise 81-3, MARWOOD Cruise 81-1, and HOWE BAY Cruise 81-1, March 9-27, 1981.

| Species | Vessel catch GBR81-3 (kg) | Vessel catch MW81-1 (kg) | Vessel catch HB81-1 (kg) | Total catch (kg) | Percent of total catch |
|---|---|---|---|---|---|
| Spiny dogfish | 71 | 19,637 | 25,260 | 44,968 | 82.99 |
| Pacific hake | - | Tr | 3,480 | 3,480 | 6.42 |
| Pacific herring | 1,796 | 861 | 105 | 2,762 | 5.10 |
| Yellowtail rockfish | 19 | 208 | 1,343 | 1,570 | 2.90 |
| Widow rockfish | 77 | 421 | 152 | 650 | 1.20 |
| Walleye pollock | - | 78 | 238 | 316 | 0.58 |
| Redstripe rockfish | 82 | 5 | 18 | 105 | 0.19 |
| Chinook salmon | 4 | 90 | 5 | 99 | 0.18 |
| Eulachon | 9 | 53 | 1 | 63 | 0.12 |
| Bocaccio rockfish | - | 38 | 8 | 46 | 0.09 |
| Jellyfish | 11 | 30 | Tr | 41 | 0.08 |
| Northern anchovy | - | 36 | - | 36 | 0.07 |
| Squid | Tr | 18 | 3 | 21 | 0.04 |
| Soupfin shark | - | 15 | - | 15 | |
| Lingcod | - | 8 | - | 8 | |
| Big skate | - | 5 | - | 5 | |
| Coho salmon | - | 1 | - | 1 | |
| Medusa fish | - | Tr | - | Tr | 0.04 |
| King-of-the-salmon | - | Tr | - | Tr | |
| Ribbon barracudina | - | - | - | Tr | |
| Eared blacksmelt | - | - | - | Tr | |
| California Headlightfish | Tr | - | - | Tr | |
| Total | 2,069 | 21,506 | 30,613 | 54,188 | 100.0 |

Tr = Trace, less than 1.0 kg.

Table 5a. Species composition of G. B. REED, midwater trawl catches March 9-27, 1981.

| Tow number | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Total catch (kg) | 157 | - | 15 | Tr |
| Duration (min) | 31 | 8 | 30 | 30 |
| Locality | Esteban | Outer Edge | Outer Edge | Outer Edge |
| Soupfin shark | - | - | - | - |
| Spiny dogfish | - | - | - | - |
| Big skate | - | - | - | - |
| Pacific herring | 78 | - | 11 | Tr |
| Northern anchovy | - | - | - | - |
| Coho salmon | - | - | - | - |
| Chinook salmon | - | - | - | - |
| Eulachon | - | - | 2 | Tr |
| Eared blacksmelt | - | - | - | - |
| Ribbon barracudina | - | - | - | - |
| California headlightfish | - | - | - | - |
| Pacific cod | - | - | - | - |
| Pacific hake | - | - | - | - |
| Walleye pollock | - | - | - | - |
| King-of-the-salmon | - | - | - | - |
| Medusa fish | - | - | - | - |
| Widow rockfish | - | - | - | - |
| Yellowtail rockfish | 5 | - | 2 | - |
| Bocaccio rockfish | - | - | - | - |
| Redstripe rockfish | 74 | - | - | - |
| Lingcod | - | - | - | - |
| Invertebrates | | | | |
| Jellyfish | Tr | - | Tr | Tr |
| Squid | - | - | Tr | - |

Table 5a (cont'd)

| Tow number | 5 | 6 | 7 | 8 |
|---|---|---|---|---|
| Total catch (kg) | 41 | 275 | 193 | 342 |
| Duration (min) | 37 | 40 | 25 | 42 |
| Locality | Outer Edge | Outer Edge | Outer Edge | Outer Edge |
| Soupfin shark | - | - | - | - |
| Spiny dogfish | 2 | 4 | - | - |
| Big skate | - | - | - | - |
| Pacific herring | 37 | 262 | 193 | 245 |
| Northern anchovy | - | - | - | - |
| Coho salmon | - | - | - | - |
| Chinook salmon | - | - | - | - |
| Eulachon | - | - | - | - |
| Eared blacksmelt | - | - | - | - |
| Ribbon barracudina | - | - | - | - |
| California headlightfish | - | - | - | - |
| Pacific cod | - | - | - | - |
| Pacific hake | - | - | - | - |
| Walleye pollock | - | - | - | - |
| King-of-the-salmon | - | - | - | - |
| Medusa fish | - | - | - | - |
| Widow rockfish | - | - | - | - |
| Yellowtail rockfish | - | - | - | - |
| Bocaccio rockfish | - | - | - | - |
| Redstripe rockfish | - | - | - | - |
| Lingcod | - | - | - | - |
| Invertebrates | | | | |
| Jellyfish | 2 | 9 | - | - |
| Squid | - | - | - | - |

Table 5a (cont'd)

| Tow number | 9 | 10 | 11 | 12 |
|---|---|---|---|---|
| Total catch (kg) | 30 | 51 | 46 | 68 |
| Duration (min) | 28 | 30 | 33 | 38 |
| Locality | Mid-Prairies | Outer Edge | Outer Edge | J.D.F. Trench |
| Soupfin shark | - | - | - | - |
| Spiny dogfish | - | - | 8 | 37 |
| Big skate | - | - | - | - |
| Pacific herring | 23 | 51 | 37 | 31 |
| Northern anchovy | - | - | - | - |
| Coho salmon | - | - | - | - |
| Chinook salmon | - | - | - | - |
| Eulachon | 7 | - | - | - |
| Eared blacksmelt | - | - | - | - |
| Ribbon barracudina | - | - | - | - |
| California headlightfish | Tr | - | - | - |
| Pacific cod | - | - | - | - |
| Pacific hake | - | - | - | - |
| Walleye pollock | - | - | - | - |
| King-of-the-salmon | - | - | - | - |
| Medusa fish | - | - | - | - |
| Widow rockfish | - | - | - | - |
| Yellowtail rockfish | - | - | - | - |
| Bocaccio rockfish | - | - | - | - |
| Redstripe rockfish | - | - | - | - |
| Lingcod | - | - | - | - |
| Invertebrates | | | | |
| Jellyfish | - | - | 1 | Tr |
| Squid | Tr | - | - | - |

Table 5a (cont'd)

| Tow number | 13 | 14 |
|---|---|---|
| Total catch (kg) | 150 | 702 |
| Duration (min) | 30 | 26 |
| Locality | J.D.F. Trench | J.D.F. Trench |
| Soupfin shark | - | - |
| Spiny dogfish | 20 | - |
| Big skate | - | - |
| Pacific herring | 126 | 702 |
| Northern anchovy | - | - |
| Coho salmon | - | - |
| Chinook salmon | 4 | - |
| Eulachon | - | - |
| Eared blacksmelt | - | - |
| Ribbon barracudina | - | - |
| California headlightfish | - | - |
| Pacific cod | - | - |
| Pacific hake | - | - |
| Walleye pollock | - | - |
| King-of-the-salmon | - | - |
| Medusa fish | - | - |
| Widow rockfish | - | - |
| Yellowtail rockfish | - | - |
| Bocaccio rockfish | - | - |
| Redstripe rockfish | - | - |
| Lingcod | - | - |
| Invertebrates | | |
| Jellyfish | - | - |
| Squid | - | - |

Table 5b. Species composition of M/V MARWOOD, midwater trawl catches March 9-27, 1981.

| Tow number | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Total catch (kg) | 20 | 51 | 50 | 18,012 |
| Duration (min) | 95 | 35 | 80 | 85 |
| Locality | Prairies | San Juan | San Juan | Finger Bk. |
| Soupfin shark | 15 | - | - | - |
| Spiny dogfish | - | 6 | 18 | 18,000 |
| Big skate | - | - | - | - |
| Pacific herring | - | 5 | 3 | 10 |
| Northern anchovy | - | - | - | - |
| Coho salmon | - | - | - | - |
| Chinook salmon | - | 12 | 18 | - |
| Eulachon | - | 8 | Tr | - |
| Eared blacksmelt | - | - | - | - |
| Ribbon barracudina | - | - | - | - |
| California headlightfish | - | - | - | - |
| Pacific cod | - | - | - | - |
| Pacific hake | - | - | - | - |
| Walleye pollock | - | 18 | 5 | - |
| King-of-the-salmon | - | - | - | - |
| Medusa fish | - | - | - | - |
| Widow rockfish | - | - | - | 2 |
| Yellowtail rockfish | - | - | 6 | - |
| Bocaccio rockfish | - | - | - | - |
| Redstripe rockfish | - | - | - | - |
| Lingcod | - | - | - | - |
| Invertebrates | | | | |
| Jellyfish | 5 | 2 | - | - |
| Squid | - | - | - | - |

Table 5b (cont'd)

| Tow number | 5 | 6 | 7 | 8 |
|---|---|---|---|---|
| Total catch (kg) | 298 | 22 | 1,300 | 15 |
| Duration (min) | 85 | 80 | 10 | 37 |
| Locality | Nitinat Canyon | S. Finger | Finger Bk. | Big Bank |
| Soupfin shark | - | - | - | - |
| Spiny dogfish | 10 | - | 1,300 | Tr |
| Big skate | - | - | - | - |
| Pacific herring | - | - | Tr | - |
| Northern anchovy | - | - | - | Tr |
| Coho salmon | - | - | - | - |
| Chinook salmon | - | - | - | 5 |
| Eulachon | - | - | - | Tr |
| Eared blacksmelt | - | - | - | - |
| Ribbon barracudina | - | - | - | - |
| California headlightfish | - | - | - | - |
| Pacific cod | - | - | - | - |
| Pacific hake | - | - | - | - |
| Walleye pollock | - | - | - | - |
| King-of-the-salmon | - | Tr | - | - |
| Medusa fish | - | - | - | - |
| Widow rockfish | 280 | 17 | - | - |
| Yellowtail rockfish | 8 | - | - | 10 |
| Bocaccio rockfish | - | - | - | - |
| Redstripe rockfish | - | - | - | - |
| Lingcod | - | - | - | - |
| Invertebrates | | | | |
| Jellyfish | - | 5 | - | - |
| Squid | - | - | - | Tr |

Table 5b (cont'd)

| Tow number | 9 | 10 | 11 | 12 |
|---|---|---|---|---|
| Total catch (kg) | 86 | 6 | 1 | 18 |
| Duration (min) | 40 | 120 | 30 | 55 |
| Locality | Big Bank | Outside Edge | S.E. Finger | S.E. Finger |
| Soupfin shark | - | - | - | - |
| Spiny dogfish | - | - | - | - |
| Big skate | - | - | - | - |
| Pacific herring | Tr | Tr | Tr | Tr |
| Northern anchovy | Tr | - | - | - |
| Coho salmon | - | - | - | - |
| Chinook salmon | - | - | - | - |
| Eulachon | 5 | Tr | Tr | - |
| Eared blacksmelt | - | - | - | - |
| Ribbon barracudina | - | - | - | - |
| California headlightfish | - | - | - | - |
| Pacific cod | - | - | - | - |
| Pacific hake | Tr | - | - | - |
| Walleye pollock | 55 | - | - | - |
| King-of-the-salmon | - | - | - | - |
| Medusa fish | - | - | - | - |
| Widow rockfish | - | - | - | - |
| Yellowtail rockfish | 10 | - | 1 | - |
| Bocaccio rockfish | 16 | 1 | - | - |
| Redstripe rockfish | - | - | - | - |
| Lingcod | - | - | - | - |
| Invertebrates | | | | |
| Jellyfish | - | 5 | Tr | 5 |
| Squid | - | - | Tr | 13 |

Table 5b (cont'd)

| Tow number | 13 | 14 | 15 | 16 |
|---|---|---|---|---|
| Total catch (kg) | Tr | 7 | 9 | 72 |
| Duration (min) | 15 | 60 | 60 | 110 |
| Locality | Finger Bk. | S. Finger | Prairies | Prairies |
| Soupfin shark | - | - | - | - |
| Spiny dogfish | - | - | - | - |
| Big skate | - | - | - | - |
| Pacific herring | - | 2 | 6 | 44 |
| Northern anchovy | - | - | - | - |
| Coho salmon | - | - | - | - |
| Chinook salmon | - | - | - | - |
| Eulachon | - | Tr | - | - |
| Eared blacksmelt | - | - | - | - |
| Ribbon barracudina | - | - | - | - |
| California headlightfish | - | - | - | - |
| Pacific cod | - | - | - | - |
| Pacific hake | - | - | - | - |
| Walleye pollock | - | - | - | - |
| King-of-the-salmon | - | - | - | - |
| Medusa fish | - | Tr | - | - |
| Widow rockfish | - | - | - | - |
| Yellowtail rockfish | - | - | - | - |
| Bocaccio rockfish | - | - | - | 15 |
| Redstripe rockfish | - | Tr | - | 5 |
| Lingcod | - | - | - | 8 |
| Invertebrates | | | | |
| Jellyfish | Tr | 5 | 3 | - |
| Squid | - | - | - | - |

Table 5b (cont'd)

| Tow number | 17 | 18 | 19 | 20 |
|---|---|---|---|---|
| Total catch (kg) | 84 | 714 | 20 | 455 |
| Duration (min) | 95 | 50 | 15 | 45 |
| Locality | San Juan | Swiftsure | Swiftsure | Swiftsure |
| Soupfin shark | - | - | - | - |
| Spiny dogfish | 25 | 50 | 15 | 200 |
| Big skate | - | - | - | - |
| Pacific herring | 4 | 660 | - | 125 |
| Northern anchovy | - | - | - | - |
| Coho salmon | 1 | - | - | - |
| Chinook salmon | 50 | 4 | 1 | - |
| Eulachon | Tr | - | - | - |
| Eared blacksmelt | - | - | - | - |
| Ribbon barracudina | - | - | - | - |
| California headlightfish | - | - | - | - |
| Pacific cod | - | - | - | 2 |
| Pacific hake | - | - | - | - |
| Walleye pollock | - | - | - | - |
| King-of-the-salmon | - | - | - | - |
| Medusa fish | - | - | - | - |
| Widow rockfish | - | - | - | 120 |
| Yellowtail rockfish | - | - | - | 5 |
| Bocaccio rockfish | - | - | 3 | 3 |
| Redstripe rockfish | - | - | - | - |
| Lingcod | - | - | - | - |
| Invertebrates | | | | |
| Jellyfish | - | - | - | - |
| Squid | 4 | - | 1 | - |

Table 5b (cont'd)

| Tow number | 21 | 22 | 23 | 24 |
|---|---|---|---|---|
| Total catch (kg) | Tr | Tr | 1 | Tr |
| Duration (min) | 95 | 35 | 15 | 45 |
| Locality | Swiftsure | S. Swiftsure | Prairies | Prairies |
| Soupfin shark | - | - | - | - |
| Spiny dogfish | Tr | - | - | - |
| Big skate | - | - | - | - |
| Pacific herring | Tr | - | Tr | Tr |
| Northern anchovy | - | - | 1 | - |
| Coho salmon | - | - | - | - |
| Chinook salmon | - | - | - | - |
| Eulachon | - | - | Tr | - |
| Eared blacksmelt | - | - | - | - |
| Ribbon barracudina | - | - | - | - |
| California headlightfish | - | - | - | - |
| Pacific cod | - | - | - | - |
| Pacific hake | - | - | - | - |
| Walleye pollock | - | - | - | - |
| King-of-the-salmon | - | - | - | - |
| Medusa fish | - | - | - | - |
| Widow rockfish | - | - | - | - |
| Yellowtail rockfish | - | - | - | - |
| Bocaccio rockfish | - | - | - | - |
| Redstripe rockfish | - | - | - | - |
| Lingcod | - | - | - | - |
| Invertebrates | | | | |
| Jellyfish | - | - | - | - |
| Squid | Tr | Tr | - | - |

Table 5b (cont'd)

| Tow number | 25 | 26 | 27 |
|---|---|---|---|
| Total catch (kg) | 5 | 111 | 149 |
| Duration (min) | 15 | 55 | 60 |
| Locality | Prairies | Prairies | Prairies |
| Soupfin shark | - | - | - |
| Spiny dogfish | 3 | - | 10 |
| Big skate | - | - | 5 |
| Pacific herring | Tr | Tr | 2 |
| Northern anchovy | - | 15 | 20 |
| Coho salmon | - | - | - |
| Chinook salmon | - | - | - |
| Eulachon | - | 10 | 30 |
| Eared blacksmelt | - | Tr | - |
| Ribbon barracudina | - | Tr | - |
| California headlightfish | - | Tr | Tr |
| Pacific cod | - | - | - |
| Pacific hake | - | - | - |
| Walleye pollock | - | - | - |
| King-of-the-salmon | - | - | - |
| Medusa fish | - | - | - |
| Widow rockfish | - | - | 2 |
| Yellowtail rockfish | 2 | 86 | 80 |
| Bocaccio rockfish | - | - | - |
| Redstripe rockfish | - | - | - |
| Lingcod | - | - | - |
| Invertebrates | | | |
| Jellyfish | - | - | - |
| Squid | - | - | - |

Table 5c. Species composition of M/V HOWE BAY, midwater trawl catches March 9-27, 1981.

| Tow number | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Total catch (kg) | 994 | 9 | 1,907 | 462 |
| Duration (min) | 15 | 20 | 8 | 17 |
| Locality | Sidney In. | Tofino In. | Miller Ch. | Miller Ch. |
| Soupfir shark | - | - | - | - |
| Spiny dogfish | - | Tr | - | 81 |
| Big skate | - | - | - | - |
| Pacific herring | - | Tr | Tr | - |
| Northern anchovy | - | - | - | - |
| Coho salmon | - | - | - | - |
| Chinook salmon | - | - | - | 3 |
| Eulachon | - | - | - | - |
| Eared blacksmelt | - | - | - | - |
| Ribbon barracudina | - | - | - | - |
| California headlightfish | - | - | - | - |
| Pacific cod | - | - | - | - |
| Pacific hake | 990 | 9 | 1,892 | 342 |
| Walleye pollock | - | Tr | 5 | 6 |
| King-of-the-salmon | - | - | - | - |
| Medusa fish | - | - | - | - |
| Widow rockfish | - | - | - | - |
| Yellowtail rockfish | 4 | - | 10 | 23 |
| Bocaccio rockfish | - | - | - | 7 |
| Redstripe rockfish | - | - | - | - |
| Lingcod | - | - | - | - |
| Invertebrates | | | | |
| Jellyfish | - | - | - | - |
| Squid | - | - | - | - |

Table 5c (cont'd)

| Tow number | 5 | 6 | 7 | 8 |
|---|---|---|---|---|
| Total catch (kg) | 576 | 5 | 241 | 2 |
| Duration (min) | 30 | 4 | 30 | 5 |
| Locality | S.W. Corner | S.W. Corner | S.W. Corner | S.E. Corner |
| Soupfin shark | – | – | – | – |
| Spiny dogfish | – | Tr | 6 | – |
| Big skate | – | – | – | – |
| Pacific herring | – | – | Tr | Tr |
| Northern anchovy | – | – | – | – |
| Coho salmon | – | – | – | – |
| Chinook salmon | – | Tr | – | – |
| Eulachon | – | – | 1 | – |
| Eared blacksmelt | – | – | – | – |
| Ribbon barracudina | – | – | – | – |
| California headlightfish | – | – | – | – |
| Pacific cod | – | – | – | – |
| Pacific hake | – | – | 1 | – |
| Walleye pollock | 3 | 2 | 222 | – |
| King-of-the-salmon | – | – | – | – |
| Medusa fish | – | – | – | – |
| Widow rockfish | – | – | – | – |
| Yellowtail rockfish | 573 | 2 | 11 | 2 |
| Bocaccio rockfish | – | 1 | – | – |
| Redstripe rockfish | – | – | – | – |
| Lingcod | – | – | – | – |
| Invertebrates | | | | |
| Jellyfish | – | – | – | – |
| Squid | – | – | – | Tr |

Table 5c (cont'd)

| Tow number | 9 | 10 | 11 | 12 |
|---|---|---|---|---|
| Total catch (kg) | 8 | 5 | 1,902 | 72 |
| Duration (min) | 15 | 6 | 35 | 13 |
| Locality | S.E. Corner | S.E. Corner | Finger Bk. | Finger Bk. |
| Soupfin shark | - | - | - | - |
| Spiny dogfish | - | Tr | 1,836 | 22 |
| Big skate | - | - | - | - |
| Pacific herring | 7 | 5 | 45 | 2 |
| Northern anchovy | - | - | - | - |
| Coho salmon | - | - | - | - |
| Chinook salmon | 1 | - | 1 | - |
| Eulachon | - | - | - | - |
| Eared blacksmelt | - | - | - | - |
| Ribbon barracudina | - | - | - | - |
| California headlightfish | - | - | - | - |
| Pacific cod | - | - | - | - |
| Pacific hake | - | - | - | - |
| Walleye pollock | - | - | - | - |
| King-of-the-salmon | - | - | - | - |
| Medusa fish | - | - | - | - |
| Widow rockfish | - | - | - | - |
| Yellowtail rockfish | - | - | 20 | 48 |
| Bocaccio rockfish | - | - | - | - |
| Redstripe rockfish | - | - | - | - |
| Lingcod | - | - | - | - |
| Invertebrates | | | | |
| Jellyfish | - | - | - | - |
| Squid | - | - | - | - |

Table 5c (cont'd)

| Tow number | 13 | 14 | 15 | 16 |
|---|---|---|---|---|
| Total catch (kg) | 23,000 | 794 | 28 | 8 |
| Duration (min) | 13 | 15 | 33 | 23 |
| Locality | Finger Bk. | S. Finger | S. Finger | S.W. Finger |
| Soupfin shark | - | - | - | - |
| Spiny dogfish | 23,000 | - | Tr | - |
| Big skate | - | - | - | - |
| Pacific herring | - | 12 | 28 | 6 |
| Northern anchovy | - | - | - | - |
| Coho salmon | - | - | - | - |
| Chinook salmon | - | - | - | - |
| Eulachon | - | - | Tr | - |
| Eared blacksmelt | - | - | - | - |
| Ribbon barracudina | - | - | - | - |
| California headlightfish | - | - | - | - |
| Pacific cod | - | - | - | - |
| Pacific hake | - | - | - | - |
| Walleye pollock | - | - | - | - |
| King-of-the-salmon | - | - | - | - |
| Medusa fish | - | - | - | - |
| Widow rockfish | - | 152 | - | - |
| Yellowtail rockfish | - | 612 | - | 2 |
| Bocaccio rockfish | - | - | - | - |
| Redstripe rockfish | - | 18 | - | - |
| Lingcod | - | - | - | - |
| Invertebrates | | | | |
| Jellyfish | - | - | - | - |
| Squid | - | - | - | Tr |

Table 5c (cont'd)

| Tow number | 17 | 18 | 19 |
|---|---|---|---|
| Total catch (kg) | 35 | 1 | 564 |
| Duration (min) | 35 | 37 | 30 |
| Locality | S.W. Finger | Finger Bk. | Trevor Ch. |
| Soupfin shark | - | - | - |
| Spiny dogfish | - | - | 315 |
| Big skate | - | - | - |
| Pacific herring | Tr | - | - |
| Northern anchovy | - | - | - |
| Coho salmon | - | - | - |
| Chinook salmon | - | - | - |
| Eulachon | Tr | - | - |
| Eared blacksmelt | - | - | - |
| Ribbon barracudina | - | - | - |
| California headlightfish | - | - | - |
| Pacific cod | - | - | - |
| Pacific hake | - | - | 246 |
| Walleye pollock | - | - | - |
| King-of-the-salmon | - | - | - |
| Medusa fish | - | - | - |
| Widow rockfish | - | - | - |
| Yellowtail rockfish | 35 | 1 | - |
| Bocaccio rockfish | - | - | - |
| Redstripe rockfish | - | - | - |
| Lingcod | - | - | - |
| Invertebrates | | | |
| Jellyfish | Tr | Tr | - |
| Squid | - | - | 3 |

Table 6a. Bridge log data by haul for G. B. REED Cruise GBR81-3, March 9-27, 1981.

VESSEL: G. B. REED DATE: Yr 81 Mo 03 Day 22 SET/HAUL NO.: 1
LOCATION: Outside Edge AREA: West Coast Vancouver Island
START: Lat.: 49° 14.4' Long.: 126° 48.6'
END: Lat.: 49° 15.8' Long.: 126° 47.8'

GEAR: M.W.T. 434 E START TIME: (P.S.T.) :1720 DURATION: 31 min.
BOTTOM DEPTH m: Start: 135 End: 124 Est. Av. Depth: 129
HEADROPE NET DEPTH RANGE m: 100-116 Est. Av. Depth: 108

DIRECTION OF SET °true: 040 SPEED kn: 3.5 DISTANCE TRAVELLED: 1.3 mi.
SET ON: Bottom schools WATER CONDITION: _____ TIDE: _____
WIND DIRECTION: S E WIND SPEED: 25 RECORDER: F. Taylor
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: Warp 225 fm
SOUNDER SUMMARY: Footrope 10 m av. off bottom.

VESSEL: G. B. REED DATE: Yr 81 Mo 03 Day 22 SET/HAUL NO.: 2
LOCATION: Outside Edge AREA: West Coast Vancouver Island
START: Lat.: 48° 44.1' Long.: 126° 08.6'
END: Lat.: 48° 43.8' Long.: 126° 08.4'

GEAR: M.W.T. 434 E START TIME: (P.S.T.) :0940 DURATION: 8 min.
BOTTOM DEPTH m: Start: 128 End: 128 Est. Av. Depth: 128
NET DEPTH RANGE m: 99-115 Est. Av. Depth: 107

DIRECTION OF SET °true: 154 SPEED kn: 3.5 DISTANCE TRAVELLED: 0.6 mi.
SET ON: bottom schools WATER CONDITION: _____ TIDE: _____
WIND DIRECTION: S E WIND SPEED: 25 kn RECORDER: F. Taylor
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: Set aborted; warp 225 fm
SOUNDER SUMMARY: Footrope 10 m av. off bottom.

Table 6a (cont'd)

VESSEL: G. B. REED DATE: Yr 81 Mo 03 Day 22 SET/HAUL NO.: 3
LOCATION: Outside Edge AREA: West Coast Vancouver Island
START: Lat.: 48° 44.2' Long.: 126° 08.6'
END: Lat.: 48° 43.0' Long.: 126° 07.9'

GEAR: M.W.T. 434 E START TIME: (P.S.T.) :1031 DURATION: 30 min.
BOTTOM DEPTH m: Start: 128 End: 130 Est. Av. Depth: 129
HEADROPE NET DEPTH RANGE m: 109-114 Est. Av. Depth: 112

DIRECTION OF SET °true: 154 SPEED kn: 3.5 DISTANCE TRAVELLED: 1.3 mi.
SET ON: Bottom schools WATER CONDITION: _____ TIDE: _____
WIND DIRECTION: S E WIND SPEED: 25 RECORDER: F. Taylor
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: Warp 275 fm
SOUNDER SUMMARY: Footrope 6 m av. off bottom.

VESSEL: G. B. REED DATE: Yr 81 Mo 03 Day 22 SET/HAUL NO.: 4
LOCATION: Outside Edge AREA: West Coast Vancouver Island
START: Lat.: 48° 41.9' Long.: 126° 05.9'
END: Lat.: 48° 40.1' Long.: 126° 05.7'

GEAR: M.W.T. 434 E START TIME: (P.S.T.) :1308 DURATION: 30 min.
BOTTOM DEPTH m: Start: 124 End: 128 Est. Av. Depth: 126
NET DEPTH RANGE m: 106-111 Est. Av. Depth: 109

DIRECTION OF SET °true: 160 SPEED kn: 3.5 DISTANCE TRAVELLED: 1.8 mi.
SET ON: Bottom schools WATER CONDITION: _____ TIDE: _____
WIND DIRECTION: S E WIND SPEED: 25 kn RECORDER: F. Taylor
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: Warp 225 fm
SOUNDER SUMMARY: Footrope 6 m av. off bottom.

Table 6a (cont'd)

VESSEL: G. B. REED DATE: Yr 81 Mo 03 Day 22 SET/HAUL NO.: 5
LOCATION: Outside Edge AREA: West Coast Vancouver Island
START: Lat.: 48° 31.7' Long.: 126° 10.4'
END: Lat.: 48° 33.1' Long.: 126° 08.2'

GEAR: M.W.T. 434 E START TIME: (P.S.T.) :1624 DURATION: 37 min.
BOTTOM DEPTH m: Start: 322 End: 187 Est. Av. Depth: 255
HEADROPE NET DEPTH RANGE m: 235-244 Est. Av. Depth: 240

DIRECTION OF SET °true: 055 SPEED kn: 3.5 DISTANCE TRAVELLED: 1.9 mi.
SET ON: Bottom schools WATER CONDITION: _____ TIDE: _____
WIND DIRECTION: S E WIND SPEED: 25-30 RECORDER: F. Taylor
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: Sweep line broke; warp 300 fm
SOUNDER SUMMARY: Footrope 4 m av. off bottom.

VESSEL: G. B. REED DATE: Yr 81 Mo 03 Day 24 SET/HAUL NO.: 6
LOCATION: Outside Edge AREA: West Coast Vancouver Island
START: Lat.: 48° 26.6' Long.: 126° 00.1'
END: Lat.: 48° 24.9' Long.: 126° 58.6'

GEAR: M.W.T. 434 E START TIME: (P.S.T.) :0835 DURATION: 40 min.
BOTTOM DEPTH m: Start: 183 End: 201 Est. Av. Depth: 192
NET DEPTH RANGE m: 163-177 Est. Av. Depth: 170

DIRECTION OF SET °true: 152 SPEED kn: 3.5 DISTANCE TRAVELLED: 2.0 mi.
SET ON: Bottom schools WATER CONDITION: _____ TIDE: _____
WIND DIRECTION: S E WIND SPEED: 30 kn RECORDER: F. Taylor
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: Warp 275 fm
SOUNDER SUMMARY: Footrope 11 m av. off bottom.

Table 6a (cont'd)

VESSEL: G. B. REED DATE: Yr 81 Mo 03 Day 24 SET/HAUL NO.: 7
LOCATION: Outside Edge AREA: West Coast Vancouver Island
START: Lat.: 48° 20.7' Long.: 125° 46.8'
END: Lat.: 48° 22.1' Long.: 125° 46.3'

GEAR: M.W.T. 434 E START TIME: (P.S.T.) :1218 DURATION: 25 min.
BOTTOM DEPTH m: Start: 167 End: 157 Est. Av. Depth: 162
HEADROPE NET DEPTH RANGE m: 140-147 Est. Av. Depth: 144

DIRECTION OF SET °true: 330 SPEED kn: 3.5 DISTANCE TRAVELLED: 1.4 mi.
SET ON: Bottom schools WATER CONDITION: _____ TIDE: _____
WIND DIRECTION: S E WIND SPEED: _____ RECORDER: F. Taylor
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: Portion of codend burst; warp 275 fm
SOUNDER SUMMARY: Footrope 7 m av. off bottom.

VESSEL: G. B. REED DATE: Yr 81 Mo 03 Day 24 SET/HAUL NO.: 8
LOCATION: Outside Edge AREA: West Coast Vancouver Island
START: Lat.: 48° 17.4' Long.: 125° 46.3'
END: Lat.: 48° 17.7' Long.: 125° 43.2'

GEAR: M.W.T. 434 E START TIME: (P.S.T.) :1546 DURATION: 42 min.
BOTTOM DEPTH m: Start: 201 End: 176 Est. Av. Depth: 189
NET DEPTH RANGE m: 167-174 Est. Av. Depth: 171

DIRECTION OF SET °true: 090 SPEED kn: 3.5 DISTANCE TRAVELLED: 1.9 mi.
SET ON: Bottom schools WATER CONDITION: _____ TIDE: _____
WIND DIRECTION: S E WIND SPEED: 35 kn RECORDER: F. Taylor
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: Codend burst; warp 275 fm
SOUNDER SUMMARY: Footrope 7 m av. off bottom.

Table 6a (cont'd)

VESSEL: G. B. REED DATE: Yr 81 Mo 03 Day 25 SET/HAUL NO.: 9
LOCATION: Mid-Prairies AREA: West Coast Vancouver Island
START: Lat.: 48° 19.3' Long.: 125° 17.0'
END: Lat.: 48° 20.0' Long.: 125° 15.5'

GEAR: M.W.T. 434 E START TIME: (P.S.T.) :1115 DURATION: 28 min.
BOTTOM DEPTH m: Start: 161 End: 176 Est. Av. Depth: 169
HEADROPE NET DEPTH RANGE m: 145 Est. Av. Depth: 145

DIRECTION OF SET °true: 045 SPEED kn: 3.5 DISTANCE TRAVELLED: 1.2 mi.
SET ON: Bottom schools WATER CONDITION: _____ TIDE: _____
WIND DIRECTION: S E WIND SPEED: 10 RECORDER: F. Taylor
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: Warp 250
SOUNDER SUMMARY: Footrope 13 m av. off bottom.

VESSEL: G. B. REED DATE: Yr 81 Mo 03 Day 25 SET/HAUL NO.: 10
LOCATION: Outside Edge AREA: West Coast Vancouver Island
START: Lat.: 48° 06.1' Long.: 125° 37.5'
END: Lat.: 48° 07.5' Long.: 125° 36.1'

GEAR: M.W.T. 434 E START TIME: (P.S.T.) :1445 DURATION: 30 min.
BOTTOM DEPTH m: Start: 187 End: 154 Est. Av. Depth: 171
NET DEPTH RANGE m: 142-156 Est. Av. Depth: 149

DIRECTION OF SET °true: 045 SPEED kn: 3.5 DISTANCE TRAVELLED: 2.0 mi.
SET ON: Bottom schools WATER CONDITION: _____ TIDE: _____
WIND DIRECTION: S E WIND SPEED: 12 kn RECORDER: F. Taylor
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: Warp 275 fm
SOUNDER SUMMARY: Footrope 11 m av. off bottom.

Table 6a (cont'd)

VESSEL: G. B. REED DATE: Yr 81 Mo 03 Day 25 SET/HAUL NO.: 11

LOCATION: Outside Edge AREA: West Coast Vancouver Island

START: Lat.: 48° 04.2' Long.: 125° 34.1'

END: Lat.: 48° 05.7' Long.: 125° 30.4'

GEAR: M.W.T. 434 E START TIME: (P.S.T.) :1755 DURATION: 33 min.

BOTTOM DEPTH m: Start: 172 End: 170 Est. Av. Depth: 171

HEADROPE NET DEPTH RANGE m: 142-156 Est. Av. Depth: 149

DIRECTION OF SET °true: 320 SPEED kn: 3.5 DISTANCE TRAVELLED: 2.1 mi.

SET ON: Bottom schools WATER CONDITION: _____ TIDE: _____

WIND DIRECTION: W WIND SPEED: 5 RECORDER: F. Taylor

TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____

REMARKS: Surface feed - birds and dolphins; warp 275 fm

SOUNDER SUMMARY: Footrope 11 m av. off bottom.

VESSEL: G. B. REED DATE: Yr 81 Mo 03 Day 26 SET/HAUL NO.: 12

LOCATION: Juan de Fuca Trench AREA: West Coast Vancouver Island

START: Lat.: 48° 04.2' Long.: 125° 22.4'

END: Lat.: 48° 02.0' Long.: 125° 24.5'

GEAR: M.W.T. 434 E START TIME: (P.S.T.) :0822 DURATION: 38 min.

BOTTOM DEPTH m: Start: 135 End: 157 Est. Av. Depth: 146

NET DEPTH RANGE m: 117-131 Est. Av. Depth: 124

DIRECTION OF SET °true: 215 SPEED kn: 3.5 DISTANCE TRAVELLED: 2.7 mi.

SET ON: Bottom schools WATER CONDITION: _____ TIDE: _____

WIND DIRECTION: NW WIND SPEED: 15-20 RECORDER: F. Taylor

TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____

REMARKS: Warp 250 fm

SOUNDER SUMMARY: Footrope 11 m av. off bottom.

Table 6a (cont'd)

VESSEL: G. B. REED DATE: Yr 81 Mo 03 Day 26 SET/HAUL NO.: 13
LOCATION: Juan de Fuca Trench AREA: West Coast Vancouver Island
START: Lat.: 48° 01.8' Long.: 125° 25.5'
END: Lat.: 48° 00.0' Long.: 125° 24.7'

GEAR: M.W.T. 434 E START TIME: (P.S.T.) :0955 DURATION: 30 min.
BOTTOM DEPTH m: Start: 143 End: 366 Est. Av. Depth: 255
HEADROPE NET DEPTH RANGE m: 226-240 Est. Av. Depth: 233

DIRECTION OF SET °true: 150 SPEED kn: 3.5 DISTANCE TRAVELLED: 1.8 mi.
SET ON: Bottom schools WATER CONDITION: _____ TIDE: _____
WIND DIRECTION: NW WIND SPEED: 15-20 RECORDER: F. Taylor
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: Warp 300 fm
SOUNDER SUMMARY: Footrope 11 m av. off bottom.

VESSEL: G. B. REED DATE: Yr 81 Mo 03 Day 26 SET/HAUL NO.: 14
LOCATION: Juan de Fuca Trench AREA: West Coast Vancouver Island
START: Lat.: 48° 12.5' Long.: 125° 05.6'
END: Lat.: 48° 13.6' Long.: 125° 07.5'

GEAR: M.W.T. 434 E START TIME: (P.S.T.) :1340 DURATION: 26 min.
BOTTOM DEPTH m: Start: ___ End: ___ Est. Av. Depth: 119
NET DEPTH RANGE m: 90-108 Est. Av. Depth: 99

DIRECTION OF SET °true: 330 SPEED kn: 3.5 DISTANCE TRAVELLED: 1.6 mi.
SET ON: _____ WATER CONDITION: _____ TIDE: _____
WIND DIRECTION: N W WIND SPEED: 20 kn RECORDER: F. Taylor
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: Body of trawl burst at surface-herring spilled, warp 225 fm.
SOUNDER SUMMARY: Footrope 9 m av. off bottom.

Table 6b. Bridge log data by haul for M/V MARWOOD Cruise MW81-1, March 9-27, 1981.

VESSEL: MARWOOD DATE: Yr 81 Mo 03 Day 14 SET/HAUL NO.: 1
LOCATION: Prairies AREA: West Coast Vancouver Island
START: Lat.: 47° 58.2' Long.: 125° 13.2'
END: Lat.: 48° 01.5' Long.: 125° 13.2'

GEAR: M.W.T. D-8 lin. liner START TIME: (P.S.T.) :1005 DURATION: 95 min.
BOTTOM DEPTH m: Start: 307 End: 159 Est. Av. Depth: 233
HEADROPE NET DEPTH RANGE m: 80-100 Est. Av. Depth: 90

DIRECTION OF SET °true: 360 SPEED kn: 3.0-3.5 DISTANCE TRAVELLED: 3.5 mi.
SET ON: small midwater school WATER CONDITION: _____ TIDE: _____
WIND DIRECTION: S E WIND SPEED: 40 RECORDER: B. McCarter
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: Liner tore open (no small fish); warp 100 fm
SOUNDER SUMMARY: Footrope 126 m av. off bottom.

VESSEL: MARWOOD DATE: Yr 81 Mo 03 Day 15 SET/HAUL NO.: 2
LOCATION: 4 mi. off Pt. San Juan AREA: West Coast Vancouver Island
START: Lat.: 48° 27.5' Long.: 124° 28.2'
END: Lat.: 48° 28.3' Long.: 124° 31.4'

GEAR: M.W.T. D-8 lin. liner START TIME: (P.S.T.) :1220 DURATION: 35 min.
BOTTOM DEPTH m: Start: 220 End: 211 Est. Av. Depth: 216
NET DEPTH RANGE m: 130-140 Est. Av. Depth: 135

DIRECTION OF SET °true: 280 SPEED kn: 3.0-3.5 DISTANCE TRAVELLED: 1.5 mi.
SET ON: Midwater schools WATER CONDITION: _____ TIDE: _____
WIND DIRECTION: S E WIND SPEED: 10 kn RECORDER: B. McCarter
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: Eulachon escape through web; warp 150 fm
SOUNDER SUMMARY: Feed layer above fish layer. Footrope 64 m av. off bottom.

Table 6b (cont'd)

VESSEL: MARWOOD DATE: Yr 81 Mo 03 Day 15 SET/HAUL NO.: 3
LOCATION: 4 mi. off Pt. San Juan AREA: West Coast Vancouver Island
START: Lat.: 48° 28.9' Long.: 124° 30.8'
END: Lat.: 48° 27.8' Long.: 124° 28.0'

GEAR: M.W.T. D-8 lin. liner START TIME: (P.S.T.) :1440 DURATION: 80 min.
BOTTOM DEPTH m: Start: 212 End: 210 Est. Av. Depth: 211
HEADROPE NET DEPTH RANGE m: 95-100 Est. Av. Depth: 98

DIRECTION OF SET °true: 070 SPEED kn: 3.0-3.5 DISTANCE TRAVELLED: 3.0 mi.
SET ON: Midwater schools WATER CONDITION: _____ TIDE: _____
WIND DIRECTION: S E WIND SPEED: 10 RECORDER: B. McCarter
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: Eulachon escape through web; warp 125 fm
SOUNDER SUMMARY: Footrope 97 m av. off bottom.

VESSEL: MARWOOD DATE: Yr 81 Mo 03 Day 16 SET/HAUL NO.: 4
LOCATION: S. side Finger Bank AREA: West Coast Vancouver Island
START: Lat.: 48° 25.2' Long.: 125° 35.8'
END: Lat.: 48° 26.6' Long.: 125° 30.6'

GEAR: M.W.T. D-8 lin. liner START TIME: (P.S.T.) :1225 DURATION: 85 min.
BOTTOM DEPTH m: Start: 124 End: 121 Est. Av. Depth: 123
NET DEPTH RANGE m: 80-90 Est. Av. Depth: 85

DIRECTION OF SET °true: 40 SPEED kn: 3.0-3.5 DISTANCE TRAVELLED: 3.8 mi.
SET ON: Heavy schools near bottom WATER CONDITION: _____ TIDE: _____
WIND DIRECTION: W WIND SPEED: 30 kn RECORDER: B. McCarter
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: Dickey line snapped; had to slash meshes to release dogfish; warp 100 fm
SOUNDER SUMMARY: Two heavy concentrations pass under headrope just before hauling.
Footrope 21 m av. off bottom.

Table 6b (cont'd)

VESSEL: MARWOOD DATE: Yr 81 Mo 03 Day 17 SET/HAUL NO.: 5

LOCATION: Nitinat Canyon AREA: West Coast Vancouver Island

START: Lat.: 48° 16.2' Long.: 125° 42.2'

END: Lat.: 48° 15.0' Long.: 125° 40.0'

GEAR: M.W.T. D-8 lin. liner START TIME: (P.S.T.) :0650 DURATION: 85 min.

BOTTOM DEPTH m: Start: 154 End: 168 Est. Av. Depth: 161

HEADROPE NET DEPTH RANGE m: 120 Est. Av. Depth: 120

DIRECTION OF SET °true: 180&140 SPEED kn: 3.0-3.5 DISTANCE TRAVELLED: 3.0 mi.

SET ON: schools near bottom WATER CONDITION: _____ TIDE: _____

WIND DIRECTION: W WIND SPEED: 10 RECORDER: B. McCarter

TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____

REMARKS: Warp 150 fm

SOUNDER SUMMARY: Rockfish-like schools off bottom. Footrope 24 m av. off bottom.

VESSEL: MARWOOD DATE: Yr 81 Mo 03 Day 17 SET/HAUL NO.: 6

LOCATION: S. of Finger Bank AREA: West Coast Vancouver Island

START: Lat.: 48° 18.2' Long.: 125° 36.2'

END: Lat.: 48° 17.9' Long.: 125° 31.8'

GEAR: M.W.T. D-8 lin. liner START TIME: (P.S.T.) :0935 DURATION: 80 min.

BOTTOM DEPTH m: Start: 146 End: 135 Est. Av. Depth: 141

NET DEPTH RANGE m: 45-60 Est. Av. Depth: 53

DIRECTION OF SET °true: 090 SPEED kn: 3.0-3.5 DISTANCE TRAVELLED: 3.0 mi.

SET ON: Midwater schools WATER CONDITION: _____ TIDE: _____

WIND DIRECTION: S E WIND SPEED: 10 kn RECORDER: B. McCarter

TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____

REMARKS: Brought in 25-fm warp halfway through tow; warp 50-75 fm.

SOUNDER SUMMARY: Footrope 71 m av. off bottom.

Table 6b (cont'd)

VESSEL: MARWOOD DATE: Yr 81 Mo 03 Day 17 SET/HAUL NO.: 7
LOCATION: Finger Bank AREA: West Coast Vancouver Island
START: Lat.: 48° 28.5' Long.: 125° 32.7'
END: Lat.: 48° 28.9' Long.: 125° 31.1'

GEAR: M.W.T. D-8 lin. liner START TIME: (P.S.T.) :1410 DURATION: 10 min.
BOTTOM DEPTH m: Start: 95 End: 95 Est. Av. Depth: 95
HEADROPE NET DEPTH RANGE m: 80 Est. Av. Depth: 80

DIRECTION OF SET °true: 050 SPEED kn: 3.0-3.5 DISTANCE TRAVELLED: 1.0 mi.
SET ON: Heavy schools near bot. WATER CONDITION: _____ TIDE: _____
WIND DIRECTION: S E WIND SPEED: 10 RECORDER: B. McCarter
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: Chains hit bottom (polished); warp 100 fm
SOUNDER SUMMARY: Footrope on bottom.

VESSEL: MRWOOD DATE: Yr 81 Mo 03 Day 18 SET/HAUL NO.: 8
LOCATION: Big Bank-West Gully AREA: West Coast Vancouver Island
START: Lat.: 48° 43.3' Long.: 125° 36.0'
END: Lat.: 48° 42.6' Long.: 125° 39.0'

GEAR: M.W.T. D-8 lin. liner START TIME: (P.S.T.) :1155 DURATION: 37 min.
BOTTOM DEPTH m: Start: 201 End: 153 Est. Av. Depth: 177
NET DEPTH RANGE m: 100-110 Est. Av. Depth: 105

DIRECTION OF SET °true: 220 SPEED kn: 3.0-3.5 DISTANCE TRAVELLED: 1.9 mi.
SET ON: Large midwater school WATER CONDITION: _____ TIDE: _____
WIND DIRECTION: S E WIND SPEED: 5 kn RECORDER: B. McCarter
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: Eulachon escape through web; warp 100 fm
SOUNDER SUMMARY: School 2 mi wide and 3 mi long at 100-120 m depth interval.
Footrope 57 m av. off bottom.

Table 6b (cont'd)

VESSEL: MARWOOD DATE: Yr 81 Mo 03 Day 18 SET/HAUL NO.: 9

LOCATION: Big Bank-West Gully AREA: West Coast Vancouver Island

START: Lat.: 48° 42.3' Long.: 125° 41.0'

END: Lat.: 48° 42.6' Long.: 125° 39.1'

GEAR: M.W.T. D-8 lin. liner START TIME: (P.S.T.) :1353 DURATION: 40 min.

BOTTOM DEPTH m: Start: 143 End: 150 Est. Av. Depth: 147

HEADROPE NET DEPTH RANGE m: 100-110 Est. Av. Depth: 105

DIRECTION OF SET °true: 040 SPEED kn: 3.0-3.5 DISTANCE TRAVELLED: 1.5 mi.

SET ON: Large midwater school WATER CONDITION: _____ TIDE: _____

WIND DIRECTION: S E WIND SPEED: 5 RECORDER: B. McCarter

TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____

REMARKS: Eulachon escape through web. Some anchovy. Warp 100 fm

SOUNDER SUMMARY: School 2 mi wide and 3 mi long at 100-120 m depth interval.
Footrope 24 m av. off bottom.

VESSEL: MARWOOD DATE: Yr 81 Mo 03 Day 19 SET/HAUL NO.: 10

LOCATION: Outside Edge AREA: West Coast Vancouver Island

START: Lat.: 48° 34.2' Long.: 126° 04.0'

END: Lat.: 48° 33.4' Long.: 126° 03.2'

GEAR: M.W.T. D-8 lin. liner START TIME: (P.S.T.) :0725 DURATION: 120 min.

BOTTOM DEPTH m: Start: 170 End: 165 Est. Av. Depth: 167

NET DEPTH RANGE m: 130-140 Est. Av. Depth: 135

DIRECTION OF SET °true: 290&060 SPEED kn: 3.0-3.5 DISTANCE TRAVELLED: 3.8 mi.

SET ON: Small schools near bott. WATER CONDITION: _____ TIDE: _____

WIND DIRECTION: S E WIND SPEED: 10 kn RECORDER: B. McCarter

TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____

REMARKS: Reversed course. Eulachon in web. Warp 150 fm

SOUNDER SUMMARY: Footrope 16 m av. off bottom.

Table 6b (cont'd)

VESSEL: MARWOOD DATE: Yr 81 Mo 03 Day 20 SET/HAUL NO.: 11
LOCATION: SE of Finger Bank AREA: West Coast Vancouver Island
START: Lat.: 48° 23.8' Long.: 125° 19.0'
END: Lat.: 48° 23.5' Long.: 125° 19.8'

GEAR: M.W.T. D-8 lin. liner START TIME: (P.S.T.) :0710 DURATION: 30 min.
BOTTOM DEPTH m: Start: 123 End: 128 Est. Av. Depth: 126
HEADROPE NET DEPTH RANGE m: 80-85 Est. Av. Depth: 83

DIRECTION OF SET °true: 230 SPEED kn: 3.0-3.5 DISTANCE TRAVELLED: 0.9 mi.
SET ON: Small bottom schools WATER CONDITION: _____ TIDE: _____
WIND DIRECTION: S E WIND SPEED: <5 RECORDER: B. McCarter
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: Warp 100 fm
SOUNDER SUMMARY: Footrope 26 m av. off bottom.

VESSEL: MARWOOD DATE: Yr 81 Mo 03 Day 20 SET/HAUL NO.: 12
LOCATION: SE of Finger Bank AREA: West Coast Vancouver Island
START: Lat.: 48° 24.8' Long.: 125° 14.0'
END: Lat.: 48° 23.2' Long.: 125° 17.0'

GEAR: M.W.T. D-8 lin. liner START TIME: (P.S.T.) :0920 DURATION: 55 min.
BOTTOM DEPTH m: Start: 123 End: 117 Est. Av. Depth: 120
NET DEPTH RANGE m: 80-85 Est. Av. Depth: 83

DIRECTION OF SET °true: 220 SPEED kn: 3.0-3.5 DISTANCE TRAVELLED: 2.5 mi.
SET ON: Small bottom schools WATER CONDITION: _____ TIDE: _____
WIND DIRECTION: S E WIND SPEED: <5 kn RECORDER: B. McCarter
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: Porpoise schools observed while hauling; warp 100 fm
SOUNDER SUMMARY: Severe interference showing on net recorder. Footrope 20 m av. off bottom.

Table 6b (cont'd)

VESSEL: MARWOOD DATE: Yr 81 Mo 03 Day 20 SET/HAUL NO.: 13

LOCATION: S. side Finger Bank AREA: West Coast Vancouver Island

START: Lat.: 48° 25.7' Long.: 125° 34.8'

END: Lat.: 48° 25.5' Long.: 125° 33.9'

GEAR: M.W.T. D-8 lin. liner START TIME: (P.S.T.) :1245 DURATION: 15 min.

BOTTOM DEPTH m: Start: 135 End: 132 Est. Av. Depth: 134

HEADROPE NET DEPTH RANGE m: 15-20 Est. Av. Depth: 17

DIRECTION OF SET °true: 140 SPEED kn: 3.0-3.5 DISTANCE TRAVELLED: 0.8 mi.

SET ON: Surface layer WATER CONDITION: _____ TIDE: _____

WIND DIRECTION: S E WIND SPEED: <5 RECORDER: B. McCarter

TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____

REMARKS: Many birds settling on surface; warp 25 fm

SOUNDER SUMMARY: Feed layer: 15-20 m depth interval. Footrope 107 m av. off bottom.

VESSEL: MARWOOD DATE: Yr 81 Mo 03 Day 20 SET/HAUL NO.: 14

LOCATION: S. of Finger Bank AREA: West Coast Vancouver Island

START: Lat.: 48° 18.6' Long.: 125° 32.8'

END: Lat.: 48° 19.5' Long.: 125° 35.8'

GEAR: M.W.T. D-8 lin. liner START TIME: (P.S.T.) :1710 DURATION: 60 min.

BOTTOM DEPTH m: Start: 135 End: 137 Est. Av. Depth: 136

NET DEPTH RANGE m: 110 Est. Av. Depth: 110

DIRECTION OF SET °true: 250 SPEED kn: 3.0-3.5 DISTANCE TRAVELLED: 2.5 mi.

SET ON: small bottom schools WATER CONDITION: _____ TIDE: _____

WIND DIRECTION: S E WIND SPEED: <5 kn RECORDER: B. McCarter

TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____

REMARKS: Warp 125 fm

SOUNDER SUMMARY: Footrope 9 m av. off bottom.

Table 6b (cont'd)

VESSEL: MARWOOD DATE: Yr 81 Mo 03 Day 21 SET/HAUL NO.: 15

LOCATION: Prairie Ground AREA: West Coast Vancouver Island

START: Lat.: 48° 05.7' Long.: 125° 27.1'

END: Lat.: 48° 08.2' Long.: 125° 28.6'

GEAR: M.W.T. D-8 lin. liner START TIME: (P.S.T.) :1410 DURATION: 60 min.

BOTTOM DEPTH m: Start: 143 End: 139 Est. Av. Depth: 141

HEADROPE NET DEPTH RANGE m: 100-120 Est. Av. Depth: 110

DIRECTION OF SET °true: 310 SPEED kn: 3.0-3.5 DISTANCE TRAVELLED: 2.8 mi.

SET ON: Small bottom schools WATER CONDITION: _____ TIDE: _____

WIND DIRECTION: S E WIND SPEED: 15 RECORDER: B. McCarter

TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____

REMARKS: Warp 125 fm

SOUNDER SUMMARY: Footrope 14 m av. off bottom.

VESSEL: MARWOOD DATE: Yr 81 Mo 03 Day 22 SET/HAUL NO.: 16

LOCATION: Prairie Ground AREA: West Coast Vancouver Island

START: Lat.: 48° 10.5' Long.: 125° 21.0'

END: Lat.: 48° 13.5' Long.: 125° 16.2'

GEAR: M.W.T. D-8 lin. liner START TIME: (P.S.T.) :0650 DURATION: 110 min.

BOTTOM DEPTH m: Start: 135 End: 115 Est. Av. Depth: 125

NET DEPTH RANGE m: 20-100 Est. Av. Depth: 60

DIRECTION OF SET °true: 040 SPEED kn: 3.0-3.5 DISTANCE TRAVELLED: 5.0 mi.

SET ON: All layers WATER CONDITION: _____ TIDE: _____

WIND DIRECTION: S W WIND SPEED: 10 kn RECORDER: B. McCarter

TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____

REMARKS: Varied warp length 25; 50; 100 and 125 fm

SOUNDER SUMMARY: Herring-like school near surface to bottom. Footrope 48 m av. off bottom.

Table 6b (cont'd)

VESSEL: MARWOOD DATE: Yr 81 Mo 03 Day 22 SET/HAUL NO.: 17

LOCATION: 2 mi. off Pt. San Juan AREA: West Coast Vancouver Island

START: Lat.: 48° 27.5' Long.: 124° 20.0'

END: Lat.: 48° 29.2' Long.: 124° 24.6'

GEAR: M.W.T. D-8 lin. liner START TIME: (P.S.T.) :1715 DURATION: 95 min.

BOTTOM DEPTH m: Start: 128 End: 154 Est. Av. Depth: 141

HEADROPE NET DEPTH RANGE m: 55 Est. Av. Depth: 55

DIRECTION OF SET °true: 130 SPEED kn: 3.0-3.5 DISTANCE TRAVELLED: 4.8 mi.

SET ON: Small midwater schools WATER CONDITION: _____ TIDE: _____

WIND DIRECTION: S W WIND SPEED: <5 RECORDER: B. McCarter

TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____

REMARKS: Lost chain weights - one side only; warp 75 fm

SOUNDER SUMMARY: Eulachon escape through web. Footrope 69 m av. off bottom.

VESSEL: MARWOOD DATE: Yr 81 Mo 03 Day 23 SET/HAUL NO.: 18

LOCATION: Swiftsure-Yankee Tow AREA: West Coast Vancouver Island

START: Lat.: 48° 29.0' Long.: 124° 54.8'

END: Lat.: 48° 29.6' Long.: 124° 58.7'

GEAR: M.W.T. D-8 lin. liner START TIME: (P.S.T.) :1150 DURATION: 50 min.

BOTTOM DEPTH m: Start: 88 End: 88 Est. Av. Depth: 88

NET DEPTH RANGE m: 70 Est. Av. Depth: 70

DIRECTION OF SET °true: 245 SPEED kn: 3.0-3.5 DISTANCE TRAVELLED: 2.5 mi.

SET ON: Bottom schools WATER CONDITION: _____ TIDE: _____

WIND DIRECTION: S W WIND SPEED: <5 kn RECORDER: B. McCarter

TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____

REMARKS: G.B. REED turn on trackline - some schools detected; warp 75 fm

SOUNDER SUMMARY: Several herring-like schools. Chains hit bottom. Footrope 1 m av. off bottom.

Table 6b (cont'd)

VESSEL: MARWOOD DATE: Yr 81 Mo 03 Day 23 SET/HAUL NO.: 19

LOCATION: Swiftsure-Rockpile Tow AREA: West Coast Vancouver Island

START: Lat.: 48° 32.0' Long.: 124° 54.2'

END: Lat.: 48° 32.5' Long.: 124° 52.3'

GEAR: M.W.T. D-8 lin. liner START TIME: (P.S.T.) :1535 DURATION: 15 min.

BOTTOM DEPTH m: Start: 79 End: 88 Est. Av. Depth: 84

HEADROPE NET DEPTH RANGE m: 50 Est. Av. Depth: 50

DIRECTION OF SET °true: 030 SPEED kn: 3.0-3.5 DISTANCE TRAVELLED: 1.4 mi.

SET ON: Bottom schools WATER CONDITION: _____ TIDE: _____

WIND DIRECTION: S E WIND SPEED: <5 RECORDER: B. McCarter

TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____

REMARKS: G.B. REED on trackline - see schools at 70 m; warp 50 fm

SOUNDER SUMMARY: Fish pass underneath trawl. Footrope 17 m av. off bottom.

VESSEL: MARWOOD DATE: Yr 81 Mo 03 Day 23 SET/HAUL NO.: 20

LOCATION: Swiftsure-Rockpile Tow AREA: West Coast Vancouver Island

START: Lat.: 48° 32.6' Long.: 124° 51.8'

END: Lat.: 48° 30.9' Long.: 124° 54.8'

GEAR: M.W.T. D-8 lin. liner START TIME: (P.S.T.) :1630 DURATION: 45 min.

BOTTOM DEPTH m: Start: 88 End: 81 Est. Av. Depth: 85

NET DEPTH RANGE m: 60-70 Est. Av. Depth: 65

DIRECTION OF SET °true: 210 SPEED kn: 3.0-3.5 DISTANCE TRAVELLED: 2.5 mi.

SET ON: bottom schools WATER CONDITION: _____ TIDE: _____

WIND DIRECTION: S W WIND SPEED: <5 kn RECORDER: B. McCarter

TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____

REMARKS: 12-14 m trawl opening instead of normal 16-18 m opening. Warp 75 fm

SOUNDER SUMMARY: Several schools near bottom. Footrope 6 m av. off bottom.

Table 6b (cont'd)

VESSEL: MARWOOD DATE: Yr 81 Mo 03 Day 24 SET/HAUL NO.: 21
LOCATION: Outside Swiftsure Bank AREA: West Coast Vancouver Island
START: Lat.: 48° 27.8' Long.: 125° 01.0'
END: Lat.: 48° 31.5' Long.: 125° 05.2'

GEAR: M.W.T. D-8 lin. liner START TIME: (P.S.T.) :0850 DURATION: 95 min.
BOTTOM DEPTH m: Start: 112 End: 123 Est. Av. Depth: 118
HEADROPE NET DEPTH RANGE m: 90-100 Est. Av. Depth: 95

DIRECTION OF SET °true: 300 SPEED kn: 3.0-3.5 DISTANCE TRAVELLED: 4.8 mi.
SET ON: Bottom schools WATER CONDITION: _____ TIDE: _____
WIND DIRECTION: S E WIND SPEED: 35 RECORDER: B. McCarter
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: Wind and tide push vessel and gear shoreward; warp 100 fm
SOUNDER SUMMARY: Footrope 6 m av. off bottom.

VESSEL: MARWOOD DATE: Yr 81 Mo 03 Day 25 SET/HAUL NO.: 22
LOCATION: S. of Swiftsure AREA: West Coast Vancouver Island
START: Lat.: 48° 24.1' Long.: 124° 59.4'
END: Lat.: 48° 22.8' Long.: 124° 59.4'

GEAR: M.W.T. D-8 lin. liner START TIME: (P.S.T.) :0650 DURATION: 35 min.
BOTTOM DEPTH m: Start: 295 End: 143 Est. Av. Depth: 219
NET DEPTH RANGE m: 15 Est. Av. Depth: 15

DIRECTION OF SET °true: 130 SPEED kn: 3.0-3.5 DISTANCE TRAVELLED: 1.4 mi.
SET ON: Surface layer WATER CONDITION: _____ TIDE: _____
WIND DIRECTION: S W WIND SPEED: <5 kn RECORDER: B. McCarter
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: Warp 25 fm
SOUNDER SUMMARY: Footrope 187 m av. off bottom.

Table 6b (cont'd)

VESSEL: MARWOOD DATE: Yr 81 Mo 03 Day 25 SET/HAUL NO.: 23

LOCATION: Prairie Ground AREA: West Coast Vancouver Island

START: Lat.: 48° 17.9' Long.: 125° 03.4'

END: Lat.: 48° 18.5' Long.: 125° 02.6'

GEAR: M.W.T. D-8 11n. liner START TIME: (P.S.T.) :0950 DURATION: 15 min.

BOTTOM DEPTH m: Start: 189 End: 189 Est. Av. Depth: 189

HEADROPE NET DEPTH RANGE m: 150 Est. Av. Depth: 150

DIRECTION OF SET °true: 030 SPEED kn: 3.0-3.5 DISTANCE TRAVELLED: 0.8 mi.

SET ON: Bottom schools WATER CONDITION: _____ TIDE: _____

WIND DIRECTION: W WIND SPEED: <5 RECORDER: B. McCarter

TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____

REMARKS: Anchovy and eulachon escape through web; warp 150 fm

SOUNDER SUMMARY: Several schools 20 fm off bottom. Footrope 22 m av. off bottom.

VESSEL: MARWOOD DATE: Yr 81 Mo 03 Day 25 SET/HAUL NO.: 24

LOCATION: Prairie Ground AREA: West Coast Vancouver Island

START: Lat.: 48° 17.4' Long.: 125° 05.0'

END: Lat.: 48° 19.6' Long.: 125° 03.9'

GEAR: M.W.T. D-8 11n. liner START TIME: (P.S.T.) :1210 DURATION: 45 min.

BOTTOM DEPTH m: Start: 192 End: 183 Est. Av. Depth: 188

NET DEPTH RANGE m: 140-150 Est. Av. Depth: 145

DIRECTION OF SET °true: 360 SPEED kn: 3.0-3.5 DISTANCE TRAVELLED: 2.4 mi.

SET ON: same bottom schools WATER CONDITION: _____ TIDE: _____

WIND DIRECTION: W WIND SPEED: <5 kn RECORDER: B. McCarter

TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____

REMARKS: Warp 150 fm

SOUNDER SUMMARY: Fish passed underneath trawl. Footrope 21 m av. off bottom.

Table 6b (cont'd)

VESSEL: MARWOOD DATE: Yr 81 Mo 03 Day 25 SET/HAUL NO.: 25

LOCATION: Prairie Ground AREA: West Coast Vancouver Island

START: Lat.: 48° 17.4' Long.: 125° 05.0'

END: Lat.: 48° 17.9' Long.: 125° 04.0'

GEAR: M.W.T. D-8 lin. liner START TIME: (P.S.T.) :1520 DURATION: 15 min.

BOTTOM DEPTH m: Start: 181 End: 183 Est. Av. Depth: 182

HEADROPE NET DEPTH RANGE m: 135-140 Est. Av. Depth: 137

DIRECTION OF SET °true: 050 SPEED kn: 3.0-3.5 DISTANCE TRAVELLED: 0.8 mi.

SET ON: same bottom schools WATER CONDITION: _____ TIDE: _____

WIND DIRECTION: W WIND SPEED: 5 RECORDER: B. McCarter

TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____

REMARKS: Net sounder batteries dead. Abort tow. Warp 150 fm

SOUNDER SUMMARY: Footrope 23 m av. off bottom.

VESSEL: MARWOOD DATE: Yr 81 Mo 03 Day 25 SET/HAUL NO.: 26

LOCATION: Prairie Ground AREA: West Coast Vancouver Island

START: Lat.: 48° 17.3' Long.: 125° 04.0'

END: Lat.: 48° 18.8' Long.: 125° 01.6'

GEAR: M.W.T. D-8 lin. liner START TIME: (P.S.T.) :1640 DURATION: 55 min.

BOTTOM DEPTH m: Start: 190 End: 212 Est. Av. Depth: 201

NET DEPTH RANGE m: 160 Est. Av. Depth: 160

DIRECTION OF SET °true: 10 SPEED kn: 3.0-3.5 DISTANCE TRAVELLED: 2.5 mi.

SET ON: same bottom schools WATER CONDITION: _____ TIDE: _____

WIND DIRECTION: W WIND SPEED: 5 kn RECORDER: B. McCarter

TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____

REMARKS: Anchovy and eulachon escape through web. Warp 150-175 fm

SOUNDER SUMMARY: Good showing going under headrope (4 schools). Footrope 24 m av. off bottom.

Table 6b (cont'd)

VESSEL: MARWOOD DATE: Yr 81 Mo 03 Day 26 SET/HAUL NO.: 27

LOCATION: Prairie Ground AREA: West Coast Vancouver Island

START: Lat.: 48° 19.5' Long.: 125° 13.4'

END: Lat.: 48° 16.6' Long.: 125° 13.5'

GEAR: M.W.T. D-8 1in. liner START TIME: (P.S.T.) :0920 DURATION: 60 min.

BOTTOM DEPTH m: Start: 187 End: 196 Est. Av. Depth: 192

HEADROPE NET DEPTH RANGE m: 160 Est. Av. Depth: 160

DIRECTION OF SET °true: 160 SPEED kn: 3.0-3.5 DISTANCE TRAVELLED: 3.0 mi.

SET ON: bottom schools WATER CONDITION: _____ TIDE: _____

WIND DIRECTION: W WIND SPEED: 15 RECORDER: B. McCarter

TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____

REMARKS: Eulachon and anchovy escape through web; warp 175 fm

SOUNDER SUMMARY: Good showing going under headrope (3 schools). Footrope 15 m av. off bottom.

Table 6c. Bridge log data by haul for M/V HOWE BAY Cruise HB81-1, March 9-27, 1981.

VESSEL: HOWE BAY DATE: Yr 81 Mo 03 Day 16 SET/HAUL NO.: 1
LOCATION: Sydney Inlet AREA: West Coast Vancouver Island
START: Lat.: 49° 28.5' Long.: 126° 16.5'
END: Lat.: 49° 28.0' Long.: 126° 16.4'

GEAR: M.W.T. START TIME: (P.S.T.) :1145 DURATION: 15 min.
BOTTOM DEPTH m: Start: 137 End: 137 Est. Av. Depth: 137
HEADROPE NET DEPTH RANGE m: _____ Est. Av. Depth: ___

DIRECTION OF SET °true: 170 SPEED kn: 2.8 DISTANCE TRAVELLED: 0.5 mi.
SET ON: _____ WATER CONDITION: _____ TIDE: _____
WIND DIRECTION: ___ WIND SPEED: _____ RECORDER: R. K.
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: Warp 125 fm
SOUNDER SUMMARY: Footrope between 9 and 29 m off bottom.

VESSEL: HOWE BAY DATE: Yr 81 Mo 03 Day 18 SET/HAUL NO.: 2
LOCATION: Tofino Inlet AREA: West Coast Vancouver Island
START: Lat.: 49° 09.8' Long.: 125° 40.4'
END: Lat.: 49° 09.5' Long.: 125° 41.6'

GEAR: M.W.T. START TIME: (P.S.T.) :1703 DURATION: ___ min.
BOTTOM DEPTH m: Start: 70 End: 70 Est. Av. Depth: 70
NET DEPTH RANGE m: 20-30 Est. Av. Depth: 25

DIRECTION OF SET °true: 247 SPEED kn: 2.7 DISTANCE TRAVELLED: 0.9 mi.
SET ON: _____ WATER CONDITION: _____ TIDE: _____
WIND DIRECTION: ___ WIND SPEED: ___ kn RECORDER: R.K.
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: Warp 75
SOUNDER SUMMARY: Footrope 5-17 m av. off bottom.

Table 6c (cont'd)

VESSEL: HOWE BAY DATE: Yr 81 Mo 03 Day 20 SET/HAUL NO.: 3
LOCATION: Millar Channel AREA: West Coast Vancouver Island
START: Lat.: 49° 22.5' Long.: 126° 4.7'
END: Lat.: 49° 22.2' Long.: 126° 4.4'

GEAR: M.W.T. START TIME: (P.S.T.) :0825 DURATION: 8 min.
BOTTOM DEPTH m: Start: ___ End: ___ Est. Av. Depth: ___
HEADROPE NET DEPTH RANGE m: _____ Est. Av. Depth: ___

DIRECTION OF SET °true: 332 SPEED kn: 2.8 DISTANCE TRAVELLED: 0.4 mi.
SET ON: _____ WATER CONDITION: _____ TIDE: _____
WIND DIRECTION: ___ WIND SPEED: _____ RECORDER: R. K.
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: Warp 125
SOUNDER SUMMARY: Footrope 30 m off bottom.

VESSEL: HOWE BAY DATE: Yr 81 Mo 03 Day 20 SET/HAUL NO.: 4
LOCATION: Millar Channel AREA: West Coast Vancouver Island
START: Lat.: 49° 19.6' Long.: 126° 4.0'
END: Lat.: ° ' Long.: ° '

GEAR: M.W.T. START TIME: (P.S.T.) :0917 DURATION: ___ min.
BOTTOM DEPTH m: Start: ___ End: ___ Est. Av. Depth: ___
NET DEPTH RANGE m: 50-60 Est. Av. Depth: 55

DIRECTION OF SET °true: 358 SPEED kn: _____ DISTANCE TRAVELLED: ___ mi.
SET ON: _____ WATER CONDITION: _____ TIDE: _____
WIND DIRECTION: ___ WIND SPEED: ___ kn RECORDER: R. K.
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: Warp 125
SOUNDER SUMMARY: Footrope 5-10 m off bottom.

Table 6c (cont'd)

VESSEL: HOWE BAY DATE: Yr 81 Mo 03 Day 23 SET/HAUL NO.: 5

LOCATION: SW Big Bank AREA: West Coast Vancouver Island

START: Lat.: 48° 44.4' Long.: 125° 51.0'

END: Lat.: 48° 44.8' Long.: 125° 49.3'

GEAR: M.W.T. START TIME: (P.S.T.) :1055 DURATION: 30 min.

BOTTOM DEPTH m: Start: 85 End: 90 Est. Av. Depth: 88

HEADROPE NET DEPTH RANGE m: _____ Est. Av. Depth: ___

DIRECTION OF SET °true: 074 SPEED kn: 2.4 DISTANCE TRAVELLED: 1.2 mi.

SET ON: _____ WATER CONDITION: _____ TIDE: _____

WIND DIRECTION: S WIND SPEED: 10 RECORDER: R. K.

TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____

REMARKS: Warp 100 fm

SOUNDER SUMMARY: Footrope 3 m off bottom.

VESSEL: HOWE BAY DATE: Yr 81 Mo 03 Day 23 SET/HAUL NO.: 6

LOCATION: SW Big Bank AREA: West Coast Vancouver Island

START: Lat.: 48° 42.0' Long.: 125° 43.6'

END: Lat.: 48° 42.0' Long.: 125° 43.3'

GEAR: M.W.T. START TIME: (P.S.T.) :1257 DURATION: 4 min.

BOTTOM DEPTH m: Start: 148 End: 148 Est. Av. Depth: 148

NET DEPTH RANGE m: _____ Est. Av. Depth: ___

DIRECTION OF SET °true: 065 SPEED kn: _____ DISTANCE TRAVELLED: ___ mi.

SET ON: _____ WATER CONDITION: _____ TIDE: _____

WIND DIRECTION: S WIND SPEED: 10 kn RECORDER: R. K.

TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____

REMARKS: Warp 150 fm

SOUNDER SUMMARY: Footrope >35 m off bottom.

Table 6c (cont'd)

VESSEL: HOWE BAY DATE: Yr 81 Mo 03 Day 23 SET/HAUL NO.: 7
LOCATION: SW Big Bank AREA: West Coast Vancouver Island
START: Lat.: 48° 39.3' Long.: 125° 34.3'
END: Lat.: 48° 39.8' Long.: 125° 32.6'

GEAR: M.W.T. START TIME: (P.S.T.) :1506 DURATION: 30 min.
BOTTOM DEPTH m: Start: 183 End: 170 Est. Av. Depth: 177
HEADROPE NET DEPTH RANGE m: _____ Est. Av. Depth: ___

DIRECTION OF SET °true: 068 SPEED kn: 3.0 DISTANCE TRAVELLED: 1.5 mi.
SET ON: _____ WATER CONDITION: _____ TIDE: _____
WIND DIRECTION: S WIND SPEED: 10 RECORDER: R. K.
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: Warp 170 fm
SOUNDER SUMMARY: Footrope >35 m off bottom.

VESSEL: HOWE BAY DATE: Yr Mo Day _____ SET/HAUL NO.: 8
LOCATION: SE Big Bank AREA: West Coast Vancouver Island
START: Lat.: 49° 33.7' Long.: 125° 36.9'
END: Lat.: 49° 33.7' Long.: 125° 36.3'

GEAR: M.W.T. START TIME: (P.S.T.) :1710 DURATION: 5 min.
BOTTOM DEPTH m: Start: 66 End: 66 Est. Av. Depth: 66
NET DEPTH RANGE m: _____ Est. Av. Depth: ___

DIRECTION OF SET °true: 079 SPEED kn: 3.6 DISTANCE TRAVELLED: 0.3 mi.
SET ON: _____ WATER CONDITION: _____ TIDE: _____
WIND DIRECTION: S WIND SPEED: <10kn RECORDER: R. K.
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: Warp 75 fm
SOUNDER SUMMARY: Footrope 7 m off bottom.

Table 6c (cont'd)

VESSEL: HOWE BAY DATE: Yr 81 Mo 03 Day 23 SET/HAUL NO.: 9
LOCATION: SE Big Bank AREA: West Coast Vancouver Island
START: Lat.: 48° 34.1' Long.: 125° 37.4'
END: Lat.: 48° 33.9' Long.: 125° 36.1'

GEAR: M.W.T. START TIME: (P.S.T.) :1811 DURATION: 15 min.
BOTTOM DEPTH m: Start: 64 End: 64 Est. Av. Depth: 64
HEADROPE NET DEPTH RANGE m: _____ Est. Av. Depth: __

DIRECTION OF SET °true: 090 SPEED kn: 3.6 DISTANCE TRAVELLED: 0.9 mi.
SET ON: _____ WATER CONDITION: _____ TIDE: _____
WIND DIRECTION: S WIND SPEED: 5 RECORDER: R. K.
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: Warp 100 fm
SOUNDER SUMMARY: Footrope 9 m off bottom.

VESSEL: HOWE BAY DATE: Yr 81 Mo 03 Day 24 SET/HAUL NO.: 10
LOCATION: SE Big Bank AREA: West Coast Vancouver Island
START: Lat.: 48° 30.9' Long.: 125° 36.6'
END: Lat.: 48° 30.7' Long.: 125° 37.2'

GEAR: M.W.T. START TIME: (P.S.T.) :0725 DURATION: 6 min.
BOTTOM DEPTH m: Start: 88 End: 88 Est. Av. Depth: 88
NET DEPTH RANGE m: _____ Est. Av. Depth: __

DIRECTION OF SET °true: 271 SPEED kn: 3.0 DISTANCE TRAVELLED: 0.3 mi.
SET ON: _____ WATER CONDITION: _____ TIDE: _____
WIND DIRECTION: S WIND SPEED: 15-20 kn RECORDER: R. K.
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: Warp 125 fm
SOUNDER SUMMARY: Footrope up to 10 m off bottom.

Table 6c (cont'd)

VESSEL: HOWE BAY DATE: Yr 81 Mo 03 Day 24 SET/HAUL NO.: 11

LOCATION: Finger Bank AREA: West Coast Vancouver Island

START: Lat.: 48° 29.2' Long.: 125° 32.5'

END: Lat.: 48° 29.7' Long.: 125° 34.2'

GEAR: M.W.T. START TIME: (P.S.T.) :0843 DURATION: 35 min.

BOTTOM DEPTH m: Start: 92 End: 138 Est. Av. Depth: 115

HEADROPE NET DEPTH RANGE m: 65 Est. Av. Depth: ___

DIRECTION OF SET °true: 281 SPEED kn: _____ DISTANCE TRAVELLED: 1.2 mi.

SET ON: _____ WATER CONDITION: _____ TIDE: _____

WIND DIRECTION: S WIND SPEED: 20 RECORDER: R. K.

TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____

REMARKS: Warp 125

SOUNDER SUMMARY: Footrope 7-10 m off bottom.

VESSEL: HOWE BAY DATE: Yr 81 Mo 03 Day 24 SET/HAUL NO.: 12

LOCATION: Finger Bank AREA: West Coast Vancouver Island

START: Lat.: 48° 29.7' Long.: 125° 35.4'

END: Lat.: 48° 29.2' Long.: 125° 36.3'

GEAR: M.W.T. START TIME: (P.S.T.) :1124 DURATION: 13 min.

BOTTOM DEPTH m: Start: 137 End: 95 Est. Av. Depth: 116

NET DEPTH RANGE m: _____ Est. Av. Depth: ___

DIRECTION OF SET °true: 295 SPEED kn: _____ DISTANCE TRAVELLED: 0.6 mi.

SET ON: _____ WATER CONDITION: _____ TIDE: _____

WIND DIRECTION: S WIND SPEED: 20 kn RECORDER: R. K.

TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____

REMARKS: Warp 150

SOUNDER SUMMARY: Footrope >35 m off bottom.

Table 6c (cont'd)

VESSEL: HOWE BAY DATE: Yr 81 Mo 03 Day 25 SET/HAUL NO.: 13

LOCATION: Finger Bank AREA: West Coast Vancouver Island

START: Lat.: 48° 35.1' Long.: 125° 25.5'

END: Lat.: 48° 35.2' Long.: 125° 26.5'

GEAR: M.W.T. START TIME: (P.S.T.) :1257 DURATION: 13 min.

BOTTOM DEPTH m: Start: 141 End: 141 Est. Av. Depth: 141

HEADROPE NET DEPTH RANGE m: _____ Est. Av. Depth: ___

DIRECTION OF SET °true: 282 SPEED kn: 3.5 DISTANCE TRAVELLED: 0.8 mi.

SET ON: _____ WATER CONDITION: _____ TIDE: _____

WIND DIRECTION: SE WIND SPEED: 5 RECORDER: R. K.

TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____

REMARKS: Warp 125

SOUNDER SUMMARY: Footrope >35 m off bottom.

VESSEL: HOWE BAY DATE: Yr 81 Mo 03 Day 25 SET/HAUL NO.: 14

LOCATION: S. Finger Bank AREA: West Coast Vancouver Island

START: Lat.: 48° 22.9' Long.: 125° 22.4'

END: Lat.: 48° 23.7' Long.: 125° 21.9'

GEAR: M.W.T. START TIME: (P.S.T.) :1705 DURATION: 15 min.

BOTTOM DEPTH m: Start: 132 End: 132 Est. Av. Depth: 132

NET DEPTH RANGE m: 110 Est. Av. Depth: 110

DIRECTION OF SET °true: 020 SPEED kn: 3.2 DISTANCE TRAVELLED: 0.8 mi.

SET ON: _____ WATER CONDITION: _____ TIDE: _____

WIND DIRECTION: SE WIND SPEED: 5 kn RECORDER: R. K.

TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____

REMARKS: Warp 200

SOUNDER SUMMARY: Footrope 5 m from bottom.

Table 6c (cont'd)

VESSEL: HOWE BAY DATE: Yr 81 Mo 03 Day 26 SET/HAUL NO.: 15
LOCATION: Outside Edge AREA: West Coast Vancouver Island
START: Lat.: 48° 15.6' Long.: 125° 40.5'
END: Lat.: 48° 15.8' Long.: 125° 42.8'

GEAR: M.W.T. START TIME: (P.S.T.) :0914 DURATION: 33 min.
BOTTOM DEPTH m: Start: 170 End: 170 Est. Av. Depth: 170
HEADROPE NET DEPTH RANGE m: _____ Est. Av. Depth: ___

DIRECTION OF SET °true: 286 SPEED kn: _____ DISTANCE TRAVELLED: 1.3 mi.
SET ON: _____ WATER CONDITION: _____ TIDE: _____
WIND DIRECTION: W WIND SPEED: 15 RECORDER: R. K.
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: Warp 100 and 200 fm
SOUNDER SUMMARY: Footrope >35 m from bottom.

VESSEL: HOWE BAY DATE: Yr 81 Mo 03 Day 26 SET/HAUL NO.: 16
LOCATION: Outside Edge AREA: West Coast Vancouver Island
START: Lat.: 48° 18.6' Long.: 125° 46.4'
END: Lat.: 48° 19.2' Long.: 125° 47.7'

GEAR: M.W.T. START TIME: (P.S.T.) :0811 DURATION: 23 min.
BOTTOM DEPTH m: Start: 172 End: 172 Est. Av. Depth: 172
NET DEPTH RANGE m: 146 Est. Av. Depth: 146

DIRECTION OF SET °true: 317 SPEED kn: _____ DISTANCE TRAVELLED: 1.1 mi.
SET ON: _____ WATER CONDITION: _____ TIDE: _____
WIND DIRECTION: W WIND SPEED: 15 kn RECORDER: R. K.
TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____
REMARKS: Warp 225 fm
SOUNDER SUMMARY: Footrope 5-6 m from bottom.

Table 6c (cont'd)

VESSEL: HOWE BAY DATE: Yr 81 Mo 03 Day 26 SET/HAUL NO.: 17

LOCATION: SW of Finger Bank AREA: West Coast Vancouver Island

START: Lat.: 48° 25.5' Long.: 125° 39.3'

END: Lat.: 48° 24.9' Long.: 125° 37.3'

GEAR: M.W.T. START TIME: (P.S.T.) :1242 DURATION: 35 min.

BOTTOM DEPTH m: Start: 128 End: 128 Est. Av. Depth: 128

HEADROPE NET DEPTH RANGE m: 120 Est. Av. Depth: 120

DIRECTION OF SET °true: 117 SPEED kn: _____ DISTANCE TRAVELLED: 1.5 mi.

SET ON: _____ WATER CONDITION: _____ TIDE: _____

WIND DIRECTION: W WIND SPEED: 20 RECORDER: R. K.

TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____

REMARKS: Warp 175 fm

SOUNDER SUMMARY: Footrope 5 m from bottom.

VESSEL: HOWE BAY DATE: Yr 81 Mo 03 Day 26 SET/HAUL NO.: 18

LOCATION: Finger Bank AREA: West Coast Vancouver Island

START: Lat.: 48° 27.6' Long.: 125° 35.5'

END: Lat.: 48° 26.8' Long.: 125° 33.6'

GEAR: M.W.T. START TIME: (P.S.T.) :1438 DURATION: 37 min.

BOTTOM DEPTH m: Start: 101 End: ___ Est. Av. Depth: 101

NET DEPTH RANGE m: 90 Est. Av. Depth: 90

DIRECTION OF SET °true: 124 SPEED kn: _____ DISTANCE TRAVELLED: 1.3 mi.

SET ON: _____ WATER CONDITION: _____ TIDE: _____

WIND DIRECTION: W WIND SPEED: 25 kn RECORDER: R. K.

TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____

REMARKS: Warp 140 fm

SOUNDER SUMMARY: Footrope 5 m from bottom.

Table 6c (cont'd)

VESSEL: HOWE BAY DATE: Yr 81 Mo 03 Day 27 SET/HAUL NO.: 19

LOCATION: Trevor Channel AREA: West Coast Vancouver Island

START: Lat.: 48° 51.0' Long.: 125° 09.3'

END: Lat.: 48° 51.7' Long.: 125° 07.9'

GEAR: M.W.T. START TIME: (P.S.T.) :0634 DURATION: 30 min.

BOTTOM DEPTH m: Start: 97 End: 80 Est. Av. Depth: ___

HEADROPE NET DEPTH RANGE m: _____ Est. Av. Depth: ___

DIRECTION OF SET °true: 045 SPEED kn: 2.8 DISTANCE TRAVELLED: 1.4 mi.

SET ON: _____ WATER CONDITION: _____ TIDE: _____

WIND DIRECTION: ___ WIND SPEED: _____ RECORDER: R. K.

TTM: _____ TDM: _____ BT: _____ OTHER OCEANOGRAPHIC DATA: _____

REMARKS: Warp 150 fm

SOUNDER SUMMARY: Footrope 5 m from bottom.

Appendix Table 1. Size composition of herring (Clupea harengus pallasi), numbers sampled, by haul and sex for G. B. REED cruise GBR81-3, MARWOOD cruise MW81-1, and HOWE BAY cruise HB81-1, March 9-27, 1981.

| Vessel | GBR | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haul no. | 1 | | | | 3 | | | 6 | | | 7 | | |
| Length (mm) | M | F | U | T | M | F | T | M | F | T | M | F | T |
| 70-92 | 1 | - | 1 | 2 | - | - | - | - | - | - | - | - | - |
| 93-95 | 0 | - | 0 | 0 | - | - | - | - | - | - | - | - | - |
| 96-98 | 0 | - | 0 | 0 | - | - | - | - | - | - | - | - | - |
| 99-101 | 0 | - | 1 | 1 | - | - | - | - | - | - | - | - | - |
| 102-104 | 0 | 1 | - | 1 | - | - | - | - | - | - | - | - | - |
| 105-107 | 0 | 0 | - | 0 | - | - | - | - | - | - | - | - | - |
| 108-110 | 0 | 0 | - | 0 | - | - | - | - | - | - | - | - | - |
| 111-113 | 0 | 0 | - | 0 | - | - | - | - | - | - | - | - | - |
| 114-116 | 0 | 0 | - | 0 | - | - | - | - | - | - | - | - | - |
| 117-119 | 0 | 0 | - | 0 | - | - | - | - | - | - | - | - | - |
| 120-122 | 0 | 0 | - | 0 | - | - | - | - | - | - | - | - | - |
| 123-125 | 0 | 0 | - | 0 | - | - | - | - | - | - | - | - | - |
| 126-128 | 0 | 0 | - | 0 | - | - | - | - | - | - | - | - | - |
| 129-131 | 0 | 0 | - | 0 | - | - | - | - | - | - | - | - | - |
| 132-134 | 0 | 0 | - | 0 | - | - | - | - | - | - | - | - | - |
| 135-137 | 1 | 0 | - | 1 | - | - | - | - | - | - | - | - | - |
| 138-140 | 1 | 0 | - | 1 | - | - | - | - | - | - | - | - | - |
| 141-143 | 1 | 0 | - | 1 | 1 | 1 | 2 | - | 1 | 1 | - | - | - |
| 144-146 | 3 | 1 | - | 4 | 3 | 4 | 7 | - | 0 | 0 | - | - | - |
| 147-149 | 3 | 3 | - | 6 | 2 | 4 | 6 | - | 0 | 0 | 1 | - | 1 |
| 150-152 | 1 | 6 | - | 7 | 5 | 6 | 11 | - | 1 | 1 | 0 | - | 0 |
| 153-155 | 3 | 4 | - | 7 | 2 | 6 | 8 | - | 0 | 0 | 0 | - | 0 |
| 156-158 | 3 | 4 | - | 7 | 2 | 3 | 5 | - | 0 | 0 | 2 | 1 | 3 |
| 159-161 | 2 | 3 | - | 5 | 6 | 4 | 10 | - | 0 | 0 | 0 | 0 | 0 |
| 162-164 | 3 | 1 | - | 4 | 3 | 2 | 5 | 2 | 1 | 3 | 2 | 1 | 3 |
| 165-167 | 4 | 4 | - | 8 | 1 | 1 | 2 | 2 | 1 | 3 | 0 | 1 | 1 |
| 168-170 | 5 | 2 | - | 7 | 1 | 3 | 4 | 2 | 0 | 2 | 0 | 0 | 0 |
| 171-173 | 1 | 4 | - | 5 | 0 | 5 | 5 | 6 | 2 | 8 | 2 | 0 | 2 |
| 174-176 | 3 | 2 | - | 5 | 0 | 6 | 6 | 4 | 4 | 8 | 2 | 3 | 5 |
| 177-179 | 1 | 2 | - | 3 | 0 | 1 | 1 | 12 | 6 | 18 | 2 | 2 | 4 |
| 180-182 | 2 | 2 | - | 4 | 1 | 2 | 3 | 10 | 6 | 16 | 3 | 1 | 4 |
| 182-185 | 2 | 5 | - | 7 | 0 | 4 | 4 | 7 | 7 | 14 | 5 | 8 | 13 |
| 186-188 | 0 | 1 | - | 1 | 0 | 2 | 2 | 8 | 10 | 18 | 5 | 2 | 7 |
| 189-191 | 4 | 1 | - | 5 | 1 | 3 | 4 | 11 | 8 | 19 | 6 | 3 | 9 |
| 192-194 | 3 | 2 | - | 5 | 2 | 3 | 5 | 7 | 6 | 13 | 6 | 4 | 10 |
| 195-197 | 1 | 0 | - | 1 | 0 | 2 | 2 | 7 | 7 | 14 | 4 | 4 | 8 |
| 198-200 | 1 | 0 | - | 1 | 0 | 1 | 1 | 3 | 3 | 6 | 3 | 8 | 11 |
| 201-203 | - | 1 | - | 1 | 0 | 0 | 0 | 2 | 4 | 6 | 0 | 4 | 4 |
| 204-206 | - | - | - | - | 2 | 1 | 3 | 3 | 3 | 6 | 3 | 3 | 6 |
| 207-209 | - | - | - | - | 0 | 1 | 1 | 3 | 5 | 8 | 0 | 0 | 0 |
| 210-212 | - | - | - | - | 0 | 0 | 0 | 3 | 3 | 6 | 2 | 0 | 2 |
| 213-215 | - | - | - | - | 2 | 0 | 2 | 2 | 2 | 4 | 0 | 2 | 2 |

Appendix Table 1 (cont'd)

| Vessel | GBR | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haul no. | 1 | | | | 3 | | | 6 | | | 7 | | |
| Length (mm) | M | F | U | T | M | F | T | M | F | T | M | F | T |
| 216-218 | - | - | - | - | - | 0 | 0 | 2 | 1 | 3 | 1 | 1 | 2 |
| 219-221 | - | - | - | - | - | 0 | 0 | 2 | 2 | 4 | 0 | 0 | 0 |
| 222-224 | - | - | - | - | - | 0 | 0 | 4 | 1 | 5 | 0 | 0 | 0 |
| 225-227 | - | - | - | - | - | 0 | 0 | 3 | 1 | 4 | 0 | 0 | 0 |
| 228-230 | - | - | - | - | - | 0 | 0 | 0 | 2 | 2 | 0 | 2 | 2 |
| 231-233 | - | - | - | - | - | 1 | 1 | 0 | 1 | 1 | 1 | - | 1 |
| 234-236 | - | - | - | - | - | - | - | 2 | 2 | 4 | - | - | - |
| 237-239 | - | - | - | - | - | - | - | - | 0 | 0 | - | - | - |
| 240-242 | - | - | - | - | - | - | - | - | 1 | 1 | - | - | - |
| 243-245 | - | - | - | - | - | - | - | - | 0 | 0 | - | - | - |
| 246-248 | - | - | - | - | - | - | - | - | 1 | 1 | - | - | - |
| 249-251 | - | - | - | - | - | - | - | - | 1 | 1 | - | - | - |
| 252-254 | | | | | | | | | | | | | |
| Total | 49 | 49 | 2 | 100 | 34 | 66 | 100 | 107 | 93 | 200 | 50 | 50 | 100 |

Appendix Table 1 (cont'd)

| Vessel | GBR | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haul no. | 8 | | | 9 | | | 10 | | | 11 | | |
| Length (mm) | M | F | T | M | F | T | M | F | T | M | F | T |
| 70-92 | - | - | - | - | - | - | - | - | - | - | - | - |
| 93-95 | - | - | - | - | - | - | - | - | - | - | - | - |
| 96-98 | - | - | - | - | - | - | - | - | - | - | - | - |
| 99-101 | - | - | - | - | - | - | - | - | - | - | - | - |
| 102-104 | - | - | - | - | - | - | - | - | - | - | - | - |
| 105-107 | - | - | - | - | - | - | - | - | - | - | - | - |
| 108-110 | - | - | - | - | - | - | - | - | - | - | - | - |
| 111-113 | - | - | - | - | - | - | - | - | - | - | - | - |
| 114-116 | - | - | - | - | - | - | - | - | - | - | - | - |
| 117-119 | - | - | - | - | - | - | - | - | - | - | - | - |
| 120-122 | - | - | - | - | - | - | - | - | - | - | - | - |
| 123-125 | - | - | - | - | - | - | - | - | - | - | - | - |
| 126-128 | - | - | - | - | - | - | - | - | - | - | - | - |
| 129-131 | - | - | - | - | - | - | - | - | - | - | - | - |
| 132-134 | - | - | - | - | - | - | - | - | - | - | - | - |
| 135-137 | - | - | - | - | - | - | - | - | - | - | - | - |
| 138-140 | - | - | - | - | - | - | - | - | - | - | - | - |
| 141-143 | - | - | - | - | - | - | - | - | - | - | - | - |
| 144-146 | - | - | - | - | - | - | - | - | - | - | - | - |
| 147-149 | - | - | - | - | - | - | - | 1 | 1 | - | - | - |
| 150-152 | - | - | - | - | - | - | 1 | 1 | 2 | - | - | - |
| 153-155 | - | 2 | 2 | - | - | - | 0 | 2 | 2 | 1 | 2 | 3 |
| 156-158 | - | 1 | 1 | - | 1 | 1 | 0 | 2 | 2 | 1 | 1 | 2 |
| 159-161 | - | 0 | 0 | - | 0 | 0 | 4 | 6 | 10 | 0 | 0 | 0 |
| 162-164 | - | 0 | 0 | - | 0 | 0 | 2 | 3 | 5 | 0 | 2 | 2 |
| 165-167 | 1 | 0 | 1 | - | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 |
| 168-170 | 0 | 1 | 1 | 2 | 0 | 2 | 0 | 1 | 1 | 2 | 0 | 2 |
| 171-173 | 1 | 1 | 2 | 1 | 0 | 1 | 2 | 2 | 4 | 0 | 0 | 0 |
| 174-176 | 2 | 1 | 3 | 2 | 1 | 3 | 0 | 2 | 2 | 2 | 1 | 3 |
| 177-179 | 1 | 0 | 1 | 1 | 1 | 2 | 0 | 3 | 3 | 3 | 2 | 5 |
| 180-182 | 1 | 3 | 4 | 1 | 2 | 3 | 3 | 5 | 8 | 0 | 1 | 1 |
| 182-185 | 2 | 1 | 3 | 3 | 6 | 9 | 3 | 2 | 5 | 4 | 4 | 8 |
| 186-188 | 0 | 1 | 1 | 1 | 2 | 3 | 0 | 3 | 3 | 3 | 0 | 3 |
| 189-191 | 4 | 3 | 7 | 4 | 6 | 10 | 3 | 9 | 12 | 2 | 1 | 3 |
| 192-194 | 3 | 7 | 10 | 2 | 2 | 4 | 0 | 2 | 2 | 2 | 3 | 5 |
| 195-197 | 3 | 4 | 7 | 1 | 6 | 7 | 1 | 2 | 3 | 2 | 3 | 5 |
| 198-200 | 1 | 2 | 3 | 1 | 4 | 5 | 0 | 3 | 3 | 2 | 3 | 5 |
| 201-203 | 1 | 1 | 2 | 2 | 6 | 8 | 1 | 0 | 1 | 0 | 4 | 4 |
| 204-206 | 2 | 1 | 3 | 0 | 2 | 2 | 0 | 4 | 4 | 0 | 5 | 5 |
| 207-209 | 2 | 1 | 3 | 2 | 7 | 9 | 1 | 1 | 2 | 1 | 3 | 4 |
| 210-212 | 2 | 0 | 2 | 3 | 4 | 7 | 1 | 0 | 1 | 2 | 5 | 7 |
| 213-215 | 2 | 4 | 6 | 1 | 2 | 3 | 1 | 3 | 4 | 2 | 4 | 6 |

Appendix Table 1 (cont'd)

| | Vessel GBR | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haul no. | 8 | | | 9 | | | 10 | | | 11 | | |
| Length (mm) | M | F | T | M | F | T | M | F | T | M | F | T |
| 216-218 | 3 | 1 | 4 | 2 | 4 | 6 | 1 | 1 | 2 | 0 | 4 | 4 |
| 219-221 | 1 | 0 | 1 | 2 | 3 | 5 | 2 | 1 | 3 | 3 | 3 | 6 |
| 222-224 | 2 | 4 | 6 | 1 | 4 | 5 | 0 | 2 | 2 | 0 | 3 | 3 |
| 225-227 | 4 | 3 | 7 | 1 | 1 | 2 | 0 | 3 | 3 | 0 | 2 | 2 |
| 228-230 | 1 | 3 | 4 | - | 1 | 1 | 3 | 3 | 6 | 1 | 1 | 2 |
| 231-233 | 1 | 3 | 4 | - | 1 | 1 | - | 0 | 0 | 1 | 1 | 2 |
| 234-236 | 0 | 6 | 6 | - | - | - | - | 1 | 1 | 1 | 4 | 5 |
| 237-239 | 2 | 0 | 2 | - | - | - | - | 0 | 0 | - | 1 | 1 |
| 240-242 | - | 2 | 2 | - | - | - | - | 2 | 2 | - | 1 | 1 |
| 243-245 | - | 2 | 2 | - | - | - | - | - | - | - | - | - |
| 246-248 | - | - | - | - | - | - | - | - | - | - | - | - |
| 249-251 | - | - | - | - | - | - | - | - | - | - | - | - |
| 252-254 | - | - | - | - | - | - | - | - | - | - | - | - |
| Total | 42 | 58 | 100 | 33 | 67 | 100 | 30 | 70 | 100 | 35 | 65 | 100 |

Appendix Table 1 (cont'd)

| Vessel | GBR | | | | | | | | | MW | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haul no. | 12 | | | 13 | | | 14 | | | 2 | | |
| Length (mm) | M | F | T | M | F | T | M | F | T | M | F | T |
| 70–92 | – | – | – | – | – | – | – | – | – | – | – | – |
| 93–95 | – | – | – | – | – | – | – | – | – | – | – | – |
| 96–98 | – | – | – | – | – | – | – | – | – | – | – | – |
| 99–101 | – | – | – | – | – | – | – | – | – | – | – | – |
| 102–104 | – | – | – | – | – | – | – | – | – | – | – | – |
| 105–107 | – | – | – | – | – | – | – | – | – | – | – | – |
| 108–110 | – | – | – | – | – | – | – | – | – | – | – | – |
| 111–113 | – | – | – | – | – | – | – | – | – | – | – | – |
| 114–116 | – | – | – | – | – | – | – | – | – | – | – | – |
| 117–119 | – | – | – | – | – | – | – | – | – | – | – | – |
| 120–122 | – | – | – | – | – | – | – | – | – | – | – | – |
| 123–125 | – | – | – | – | – | – | – | – | – | – | – | – |
| 126–128 | – | – | – | – | – | – | – | – | – | – | – | – |
| 129–131 | – | – | – | – | – | – | – | 1 | 1 | – | – | – |
| 132–134 | – | – | – | – | – | – | – | 0 | 0 | – | – | – |
| 135–137 | – | – | – | – | – | – | – | 0 | 0 | – | – | – |
| 138–140 | – | – | – | – | – | – | – | 0 | 0 | – | – | – |
| 141–143 | 1 | 3 | 4 | – | – | – | – | 0 | 0 | – | – | – |
| 144–146 | 1 | 0 | 1 | – | – | – | – | 0 | 0 | – | – | – |
| 147–149 | 0 | 4 | 4 | – | – | – | – | 0 | 0 | – | – | – |
| 150–152 | 6 | 2 | 8 | 1 | – | 1 | – | 1 | 1 | – | – | – |
| 153–155 | 1 | 0 | 1 | 0 | 2 | 2 | – | 1 | 1 | – | – | – |
| 156–158 | 4 | 0 | 4 | 0 | 0 | 0 | – | 0 | 0 | – | – | – |
| 159–161 | 2 | 3 | 5 | 0 | 0 | 0 | – | 3 | 3 | – | – | – |
| 162–164 | 1 | 2 | 3 | 1 | 1 | 2 | 1 | 2 | 3 | – | – | – |
| 165–167 | 0 | 2 | 2 | 0 | 1 | 1 | 0 | 2 | 2 | – | – | – |
| 168–170 | 1 | 3 | 4 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | – | 1 |
| 171–173 | 1 | 1 | 2 | 1 | 3 | 4 | 0 | 2 | 2 | 0 | – | 0 |
| 174–176 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 0 | – | 0 |
| 177–179 | 2 | 2 | 4 | 1 | 0 | 1 | 1 | 2 | 3 | 0 | – | 0 |
| 180–182 | 4 | 5 | 9 | 2 | 1 | 3 | 1 | 4 | 5 | 3 | – | 3 |
| 182–185 | 5 | 4 | 9 | 0 | 2 | 2 | 3 | 3 | 6 | 1 | 3 | 4 |
| 186–188 | 0 | 3 | 3 | 0 | 2 | 2 | 1 | 5 | 6 | 1 | 0 | 1 |
| 189–191 | 1 | 6 | 7 | 3 | 6 | 9 | 5 | 8 | 13 | 2 | 2 | 4 |
| 192–194 | 3 | 2 | 5 | 1 | 4 | 5 | 2 | 5 | 7 | 0 | 2 | 2 |
| 195–197 | 2 | 1 | 3 | 3 | 6 | 9 | 2 | 3 | 5 | 0 | 2 | 2 |
| 198–200 | 0 | 3 | 3 | 2 | 2 | 4 | 1 | 5 | 6 | 0 | 3 | 3 |
| 201–203 | 1 | 3 | 4 | 3 | 3 | 6 | 5 | 4 | 9 | 2 | 1 | 3 |
| 204–206 | 1 | 1 | 2 | 0 | 4 | 4 | 1 | 1 | 2 | 0 | 2 | 2 |
| 207–209 | 1 | 1 | 2 | 1 | 3 | 4 | 1 | 2 | 3 | 1 | 1 | 2 |
| 210–212 | 4 | 1 | 5 | 1 | 3 | 4 | 1 | 2 | 3 | 1 | 1 | 2 |
| 213–215 | 1 | 1 | 2 | 1 | 3 | 4 | 0 | 4 | 4 | 0 | 2 | 2 |

Appendix Table 1 (cont'd)

| Vessel | GBR | | | | | | | | | MW | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haul no. | 12 | | | 13 | | | 14 | | | 2 | | |
| Length (mm) | M | F | T | M | F | T | M | F | T | M | F | T |
| 216-218 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 2 | 1 | 4 | 5 |
| 219-221 | 0 | 1 | 1 | 1 | 6 | 7 | 1 | 2 | 3 | 1 | – | 1 |
| 222-224 | 1 | 1 | 2 | 0 | 3 | 3 | 0 | 4 | 4 | 1 | – | 1 |
| 225-227 | 1 | – | 1 | 2 | 3 | 5 | 0 | – | 0 | – | – | – |
| 228-230 | – | – | – | 1 | 4 | 5 | 1 | – | 1 | – | – | – |
| 231-233 | – | – | – | 1 | 3 | 4 | 0 | – | 0 | – | – | – |
| 234-236 | – | – | – | 2 | 2 | 4 | 0 | – | 0 | – | – | – |
| 237-239 | – | – | – | 1 | 0 | 1 | 0 | – | 0 | – | – | – |
| 240-242 | – | – | – | – | 1 | 1 | 1 | – | 1 | – | – | – |
| 243-245 | – | – | – | – | 0 | 0 | – | – | – | – | – | – |
| 246-248 | – | – | – | – | 1 | 1 | – | – | – | – | – | – |
| 249-251 | – | – | – | – | – | – | – | – | – | – | – | – |
| 252-254 | – | – | – | – | – | – | – | – | – | – | – | – |
| Total | 45 | 55 | 100 | 30 | 70 | 100 | 30 | 70 | 100 | 15 | 23 | 38 |

Appendix Table 1 (cont'd)

| Vessel | MW | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haul no. | 3 | | | 4 | | | | 14 | | | 15 | | | |
| Length (mm) | M | F | T | M | F | U | T | M | F | T | M | F | U | T |
| 70–92 | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| 93–95 | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| 96–98 | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| 99–101 | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| 102–104 | – | – | – | – | – | 1 | 1 | – | – | – | – | – | – | – |
| 105–107 | – | – | – | – | – | 0 | 0 | – | – | – | – | – | 1 | 1 |
| 108–110 | – | – | – | – | – | 1 | 1 | – | – | – | – | – | 2 | 2 |
| 111–113 | – | – | – | – | – | 0 | 0 | – | – | – | – | – | – | 0 |
| 114–116 | – | – | – | – | – | 0 | 0 | – | – | – | – | – | – | 0 |
| 117–119 | – | – | – | – | – | 0 | 0 | – | – | – | – | – | – | 0 |
| 120–122 | – | – | – | – | – | 0 | 0 | – | – | – | – | – | – | 0 |
| 123–125 | – | – | – | – | – | 0 | 0 | – | – | – | – | – | – | 0 |
| 126–128 | – | – | – | – | – | 0 | 0 | – | – | – | – | – | – | 0 |
| 129–131 | – | – | – | – | – | 0 | 0 | – | – | – | – | – | – | 0 |
| 132–134 | – | – | – | – | – | 0 | 0 | – | – | – | – | – | – | 0 |
| 135–137 | – | – | – | 1 | – | 0 | 1 | – | – | – | – | – | – | 0 |
| 138–140 | 1 | – | 1 | 0 | 3 | 0 | 3 | – | – | – | – | – | – | 0 |
| 141–143 | 0 | 1 | 1 | 4 | 5 | 0 | 9 | – | – | – | – | 2 | – | 2 |
| 144–146 | 0 | 0 | 0 | 2 | 6 | 1 | 9 | – | 1 | 1 | – | 1 | – | 1 |
| 147–149 | 0 | 1 | 1 | 5 | 9 | 1 | 15 | 1 | 1 | 2 | 1 | 6 | – | 7 |
| 150–152 | 0 | 0 | 0 | 9 | 6 | 1 | 16 | 2 | 1 | 3 | 3 | 4 | – | 7 |
| 153–155 | 0 | 0 | 0 | 7 | 8 | 1 | 16 | 0 | 1 | 1 | 2 | 5 | – | 7 |
| 156–158 | 0 | 0 | 0 | 2 | 3 | – | 5 | 0 | 1 | 1 | 5 | 4 | – | 9 |
| 159–161 | 0 | 0 | 0 | 6 | 1 | – | 7 | 2 | 2 | 4 | 4 | 7 | – | 11 |
| 162–164 | 0 | 0 | 0 | 3 | 3 | – | 6 | 1 | 1 | 2 | 1 | 5 | – | 6 |
| 165–167 | 0 | 0 | 0 | 1 | 1 | – | 2 | 0 | 0 | 0 | 2 | 2 | – | 4 |
| 168–170 | 0 | 0 | 0 | 0 | 4 | – | 4 | 0 | 0 | 0 | 0 | 3 | – | 3 |
| 171–173 | 0 | 0 | 0 | 0 | 0 | – | 0 | 0 | 0 | 0 | 2 | 2 | – | 4 |
| 174–176 | 0 | 0 | 0 | 1 | 1 | – | 2 | 1 | 1 | 2 | 0 | 1 | – | 1 |
| 177–179 | 0 | 0 | 0 | – | 1 | – | 1 | 0 | 1 | 1 | 1 | 0 | – | 1 |
| 180–182 | 2 | 2 | 4 | – | 0 | – | 0 | 0 | 0 | 0 | 1 | 0 | – | 1 |
| 182–185 | 0 | 0 | 0 | – | 0 | – | 0 | 0 | 0 | 0 | 0 | 1 | – | 1 |
| 186–188 | 0 | 1 | 1 | – | 0 | – | 0 | 1 | 1 | 2 | 0 | 0 | – | 0 |
| 189–191 | 0 | 4 | 4 | – | 0 | – | 0 | 0 | 0 | 0 | 0 | 2 | – | 2 |
| 192–194 | 1 | 0 | 1 | – | 0 | – | 0 | 1 | 0 | 1 | 0 | 0 | – | 0 |
| 195–197 | 2 | 1 | 3 | – | 2 | – | 2 | – | 0 | 0 | 0 | 0 | – | 0 |
| 198–200 | 0 | 1 | 1 | – | – | – | – | – | 0 | 0 | 0 | 0 | – | 0 |
| 201–203 | 0 | 1 | 1 | – | – | – | – | – | 1 | 1 | 0 | 0 | – | 0 |
| 204–206 | 1 | 0 | 1 | – | – | – | – | – | 0 | 0 | 0 | 0 | – | 0 |
| 207–209 | 3 | 0 | 3 | – | – | – | – | – | 0 | 0 | 0 | 0 | – | 0 |
| 210–212 | 0 | 0 | 0 | – | – | – | – | – | 0 | 0 | 0 | 0 | – | 0 |
| 213–215 | 0 | 0 | 0 | – | – | – | – | – | 0 | 0 | 0 | 0 | – | 0 |

Appendix Table 1 (cont'd)

| Vessel | MW | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haul no. | 3 | | | 4 | | | | 14 | | | 15 | | | |
| Length (mm) | M | F | T | M | F | U | T | M | F | T | M | F | U | T |
| 216-218 | 0 | 0 | 0 | - | - | - | - | - | 1 | 1 | 0 | 0 | - | 0 |
| 219-221 | 0 | 1 | 1 | - | - | - | - | - | 0 | 0 | 0 | 1 | - | 1 |
| 222-224 | 0 | 0 | 0 | - | - | - | - | - | 0 | 0 | 0 | 0 | - | 0 |
| 225-227 | 1 | 1 | 2 | - | - | - | - | - | 0 | 0 | 0 | 2 | - | 2 |
| 228-230 | - | - | - | - | - | - | - | - | 1 | 1 | 0 | 0 | - | 0 |
| 231-233 | - | - | - | - | - | - | - | - | - | - | 0 | 1 | - | 1 |
| 234-236 | - | - | - | - | - | - | - | - | - | - | 0 | - | - | 0 |
| 237-239 | - | - | - | - | - | - | - | - | - | - | 0 | - | - | 0 |
| 240-242 | - | - | - | - | - | - | - | - | - | - | 0 | - | - | 0 |
| 243-245 | - | - | - | - | - | - | - | - | - | - | 0 | - | - | 0 |
| 246-248 | - | - | - | - | - | - | - | - | - | - | 0 | - | - | 0 |
| 249-251 | - | - | - | - | - | - | - | - | - | - | 1 | - | - | 1 |
| 252-254 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Total | 11 | 14 | 25 | 41 | 53 | 6 | 100 | 9 | 14 | 23 | 23 | 49 | 3 | 75 |

Appendix Table 1 (cont'd)

| Vessel | MV | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haul no. | 16 | | | 17 | | | 18 | | | 20 | | |
| Length (mm) | M | F | T | M | F | T | M | F | T | M | F | T |
| 70–92 | – | – | – | – | – | – | – | – | – | – | – | – |
| 93–95 | – | – | – | – | – | – | – | – | – | – | – | – |
| 96–98 | – | – | – | – | – | – | – | – | – | – | – | – |
| 99–101 | – | – | – | – | – | – | – | – | – | – | – | – |
| 102–104 | – | – | – | – | – | – | – | – | – | – | – | – |
| 105–107 | – | – | – | – | – | – | – | – | – | – | – | – |
| 108–110 | – | – | – | – | – | – | – | – | – | – | – | – |
| 111–113 | – | – | – | – | – | – | – | – | – | – | – | – |
| 114–116 | – | – | – | – | – | – | – | – | – | – | – | – |
| 117–119 | – | – | – | – | – | – | – | – | – | – | – | – |
| 120–122 | – | – | – | – | – | – | – | – | – | – | – | – |
| 123–125 | – | – | – | – | – | – | – | – | – | – | – | – |
| 126–128 | – | – | – | – | – | – | – | – | – | – | – | – |
| 129–131 | 1 | – | 1 | – | – | – | – | – | – | – | – | – |
| 132–134 | 1 | 2 | 3 | 1 | – | 1 | – | – | – | – | – | – |
| 135–137 | 2 | 1 | 3 | 1 | 2 | 3 | – | – | – | – | – | – |
| 138–140 | 4 | 2 | 6 | 2 | 1 | 3 | – | – | – | – | – | – |
| 141–143 | 11 | 12 | 23 | 4 | 8 | 12 | – | – | – | – | – | – |
| 144–146 | 1 | 8 | 9 | 2 | 5 | 7 | – | – | – | – | – | – |
| 147–149 | 1 | 13 | 14 | 1 | 7 | 8 | – | – | – | – | – | – |
| 150–152 | 6 | 6 | 12 | 2 | 8 | 10 | – | – | – | – | – | – |
| 153–155 | 4 | 6 | 10 | 0 | 3 | 3 | – | – | – | – | – | – |
| 156–158 | 4 | 5 | 9 | 2 | 1 | 3 | – | – | – | – | – | – |
| 159–161 | 0 | 3 | 3 | 1 | 1 | 2 | – | – | – | – | – | – |
| 162–164 | 1 | 3 | 4 | 0 | 1 | 1 | 1 | – | 1 | 1 | – | 1 |
| 165–167 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 |
| 168–170 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 171–173 | – | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 174–176 | – | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 2 | 3 | 1 | 4 |
| 177–179 | – | 1 | 1 | 1 | 1 | 2 | 3 | 2 | 5 | 0 | 0 | 0 |
| 180–182 | – | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 3 | 5 | 8 |
| 182–185 | – | 0 | 0 | 1 | 1 | 2 | 3 | 3 | 6 | 5 | 5 | 10 |
| 186–188 | – | 0 | 0 | 0 | 1 | 1 | 2 | 3 | 5 | 1 | 1 | 2 |
| 189–191 | – | 0 | 0 | 1 | 1 | 2 | 4 | 3 | 7 | 4 | 5 | 9 |
| 192–194 | – | 0 | 0 | 0 | 1 | 1 | 3 | 2 | 5 | 3 | 3 | 6 |
| 195–197 | – | 0 | 0 | 1 | – | 1 | 2 | 3 | 5 | 1 | 8 | 9 |
| 198–200 | – | 0 | 0 | – | – | – | 4 | 3 | 7 | 0 | 6 | 6 |
| 201–203 | – | 1 | 1 | – | – | – | 3 | 3 | 6 | 3 | 3 | 6 |
| 204–206 | – | – | – | – | – | – | 3 | 6 | 9 | 2 | 1 | 3 |
| 207–209 | – | – | – | – | – | – | 0 | 1 | 1 | 3 | 5 | 8 |
| 210–212 | – | – | – | – | – | – | 1 | 2 | 3 | 1 | 4 | 5 |
| 213–215 | – | – | – | – | – | – | 1 | 1 | 2 | 0 | 6 | 6 |

Appendix Table 1 (cont'd)

| Vessel | MW | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haul no. | 16 | | | 17 | | | 18 | | | 20 | | |
| Length (mm) | M | F | T | M | F | T | M | F | T | M | F | T |
| 216-218 | - | - | - | - | - | - | 2 | 2 | 4 | 1 | 5 | 6 |
| 219-221 | - | - | - | - | - | - | 3 | 2 | 5 | 2 | 2 | 4 |
| 222-224 | - | - | - | - | - | - | 2 | 4 | 6 | 0 | 2 | 2 |
| 225-227 | - | - | - | - | - | - | 3 | 3 | 6 | 1 | 1 | 2 |
| 228-230 | - | - | - | - | - | - | 5 | 3 | 8 | - | 0 | 0 |
| 231-233 | - | - | - | - | - | - | - | 2 | 2 | - | 1 | 1 |
| 234-236 | - | - | - | - | - | - | - | 2 | 2 | - | - | - |
| 237-239 | - | - | - | - | - | - | - | - | - | - | - | - |
| 240-242 | - | - | - | - | - | - | - | - | - | - | - | - |
| 243-245 | - | - | - | - | - | - | - | - | - | - | - | - |
| 246-248 | - | - | - | - | - | - | - | - | - | - | - | - |
| 249-251 | - | - | - | - | - | - | - | - | - | - | - | - |
| 252-254 | - | - | - | - | - | - | - | - | - | - | - | - |
| Total | 37 | 63 | 100 | 20 | 43 | 63 | 48 | 52 | 100 | 34 | 66 | 100 |

Appendix Table 1 (cont'd)

| Vessel | MW | | | H.B. | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haul no. | 27 | | | 9 | | | 10 | | | 11 | | |
| Length (mm) | M | F | T | M | F | T | M | F | T | M | F | T |
| 70-92 | - | - | - | - | - | - | - | - | - | - | - | - |
| 93-95 | - | - | - | - | - | - | - | - | - | - | - | - |
| 99-101 | - | - | - | - | - | - | - | - | - | - | - | - |
| 102-104 | - | - | - | - | - | - | - | - | - | - | - | - |
| 105-107 | - | - | - | - | - | - | - | - | - | - | - | - |
| 108-110 | - | - | - | - | - | - | - | - | - | - | - | - |
| 111-113 | - | - | - | - | - | - | - | - | - | - | - | - |
| 114-116 | - | - | - | - | - | - | - | - | - | - | - | - |
| 117-119 | - | - | - | - | - | - | - | - | - | - | - | - |
| 120-122 | - | - | - | - | - | - | - | - | - | - | - | - |
| 123-125 | - | - | - | - | - | - | - | - | - | - | - | - |
| 126-128 | - | - | - | - | - | - | - | - | - | - | - | - |
| 129-131 | - | - | - | - | - | - | - | - | - | - | - | - |
| 132-134 | - | - | - | - | - | - | 1 | 1 | 2 | - | - | - |
| 135-137 | - | - | - | - | - | - | 0 | 1 | 1 | - | - | - |
| 138-140 | - | - | - | - | - | - | 0 | 2 | 2 | - | - | - |
| 141-143 | - | - | - | - | - | - | 1 | 1 | 2 | - | - | - |
| 144-146 | - | - | - | - | - | - | 1 | 3 | 4 | - | - | - |
| 147-149 | - | - | - | - | - | - | 4 | 3 | 7 | - | - | - |
| 150-152 | - | - | - | - | 2 | 2 | 1 | 5 | 6 | - | - | - |
| 153-155 | - | - | - | - | 1 | 1 | 1 | 1 | 2 | 1 | - | 1 |
| 156-158 | - | - | - | 1 | 0 | 1 | 3 | 3 | 6 | 1 | - | 1 |
| 159-161 | 1 | - | 1 | 1 | 1 | 2 | 3 | 1 | 4 | 1 | - | 1 |
| 162-164 | 0 | - | 0 | 2 | 3 | 5 | 1 | 2 | 3 | 1 | 2 | 3 |
| 165-167 | 0 | - | 0 | 0 | 2 | 2 | 4 | 2 | 6 | 1 | 0 | 1 |
| 168-170 | 0 | - | 0 | 1 | 2 | 3 | 3 | 0 | 3 | 2 | 0 | 2 |
| 171-173 | 0 | - | 0 | 2 | 5 | 7 | 2 | 4 | 6 | 4 | 0 | 4 |
| 174-176 | 0 | - | 0 | 4 | 6 | 10 | 2 | 1 | 3 | 0 | 7 | 7 |
| 177-179 | 0 | - | 0 | 6 | 3 | 9 | 2 | 1 | 3 | 1 | 3 | 4 |
| 180-182 | 0 | - | 0 | 5 | 5 | 10 | 2 | 2 | 4 | 5 | 5 | 10 |
| 182-185 | 0 | - | 0 | 4 | 2 | 6 | 2 | 1 | 3 | 2 | 6 | 8 |
| 186-188 | 0 | - | 0 | 2 | 5 | 7 | 2 | 3 | 5 | 2 | 4 | 6 |
| 189-191 | 0 | - | 0 | 4 | 6 | 10 | 0 | 3 | 3 | 1 | 5 | 6 |
| 192-194 | 1 | - | 1 | 0 | 3 | 3 | 1 | 2 | 3 | 3 | 5 | 8 |
| 195-197 | 0 | - | 0 | 3 | 4 | 7 | 1 | 1 | 2 | 2 | 2 | 4 |
| 198-200 | 0 | - | 0 | 1 | 1 | 2 | 0 | 2 | 2 | 3 | 4 | 7 |
| 201-203 | 0 | - | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 3 | 3 | 6 |
| 204-206 | 0 | - | 0 | 0 | 2 | 2 | 1 | 0 | 1 | 1 | 0 | 1 |
| 207-209 | 0 | 1 | 1 | 1 | 1 | 2 | 0 | 1 | 1 | 1 | 1 | 2 |
| 210-212 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 5 |
| 213-215 | 2 | 0 | 2 | 0 | 2 | 2 | 0 | 1 | 1 | 1 | 2 | 3 |

Appendix Table 1 (cont'd)

| Vessel | MW | | | H.B. | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haul no. | 27 | | | 9 | | | 10 | | | 11 | | |
| Length (mm) | M | F | T | M | F | T | M | F | T | M | F | T |
| 216-218 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 |
| 219-221 | 1 | 1 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 |
| 222-224 | - | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 |
| 225-227 | - | 1 | 1 | 1 | 0 | 1 | 0 | 3 | 3 | 1 | 0 | 1 |
| 228-230 | - | - | - | 1 | 2 | 3 | 1 | 0 | 1 | 1 | 1 | 2 |
| 231-233 | - | - | - | - | 0 | 0 | - | 1 | 1 | 1 | - | 1 |
| 234-236 | - | - | - | - | 1 | 1 | - | - | - | - | - | - |
| 237-239 | - | - | - | - | - | - | - | - | - | - | - | - |
| 240-242 | - | - | - | - | - | - | - | - | - | - | - | - |
| 243-245 | - | - | - | - | - | - | - | - | - | - | - | - |
| 246-248 | - | - | - | - | - | - | - | - | - | - | - | - |
| 249-251 | - | - | - | - | - | - | - | - | - | - | - | - |
| 252-254 | - | - | - | - | - | - | - | - | - | - | - | - |
| Total | 8 | 4 | 12 | 41 | 59 | 100 | 39 | 51 | 90 | 43 | 57 | 100 |

Appendix Table 1 (cont'd)

| Vessel | H.B. | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Haul no. | 12 | | | 15 | | | 16 | | |
| Length (mm) | M | F | T | M | F | T | M | F | T |
| 70-92 | - | - | - | - | - | - | - | - | - |
| 93-95 | - | - | - | - | - | - | - | - | - |
| 99-101 | - | - | - | - | - | - | - | - | - |
| 102-104 | - | - | - | - | - | - | - | - | - |
| 105-107 | - | - | - | - | - | - | - | - | - |
| 108-110 | - | - | - | - | - | - | - | - | - |
| 111-113 | - | - | - | - | - | - | - | - | - |
| 114-116 | - | - | - | - | - | - | - | - | - |
| 117-119 | - | - | - | - | - | - | - | - | - |
| 120-122 | - | - | - | - | - | - | - | - | - |
| 123-125 | - | - | - | - | - | - | - | - | - |
| 126-128 | - | - | - | - | - | - | - | - | - |
| 129-131 | - | - | - | - | - | - | - | - | - |
| 132-134 | - | - | - | - | - | - | - | - | - |
| 135-137 | - | - | - | - | - | - | - | - | - |
| 138-140 | - | - | - | - | - | - | - | - | - |
| 141-143 | - | - | - | - | - | - | 1 | - | 1 |
| 144-146 | - | - | - | - | - | - | 0 | - | 0 |
| 147-149 | - | - | - | - | - | - | 0 | - | 0 |
| 150-152 | - | - | - | - | - | - | 0 | 1 | 1 |
| 153-155 | 1 | - | 1 | - | - | - | 0 | 0 | 0 |
| 156-158 | 0 | - | 0 | - | - | - | 1 | 0 | 1 |
| 159-161 | 0 | - | 0 | - | - | - | 0 | 1 | 1 |
| 162-164 | 0 | - | 0 | - | - | - | 0 | 0 | 0 |
| 165-167 | 0 | - | 0 | - | - | - | 1 | 0 | 1 |
| 168-170 | 0 | - | 0 | 1 | 1 | 2 | 0 | 0 | 0 |
| 171-173 | 0 | - | 0 | 1 | 2 | 3 | 2 | 0 | 2 |
| 174-176 | 1 | - | 1 | 1 | 0 | 1 | 1 | 1 | 2 |
| 177-179 | 0 | - | 0 | 0 | 2 | 2 | 1 | 2 | 3 |
| 180-182 | 0 | 1 | 1 | 4 | 0 | 4 | 1 | 4 | 5 |
| 182-185 | 2 | 1 | 3 | 3 | 1 | 4 | 4 | 1 | 5 |
| 186-188 | 0 | 1 | 1 | 3 | 4 | 7 | 5 | 0 | 5 |
| 189-191 | 1 | 2 | 3 | 4 | 2 | 6 | 2 | 2 | 4 |
| 192-194 | 0 | 0 | 0 | 7 | 4 | 11 | 2 | 4 | 6 |
| 195-197 | 0 | 2 | 2 | 7 | 5 | 12 | 2 | 2 | 4 |
| 198-200 | 0 | 0 | 0 | 0 | 5 | 5 | 2 | 2 | 4 |
| 201-203 | 0 | 0 | 0 | 6 | 3 | 9 | 1 | 2 | 3 |
| 204-206 | 0 | 2 | 2 | 2 | 1 | 3 | 0 | 0 | 0 |
| 207-209 | 0 | 0 | 0 | 0 | 8 | 8 | 4 | 2 | 6 |
| 210-212 | 1 | 0 | 1 | 1 | 3 | 4 | 2 | 1 | 3 |
| 213-215 | 0 | 1 | 1 | 0 | 3 | 3 | 1 | 5 | 6 |

Appendix Table 1 (cont'd)

| Vessel | H.B. | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Haul no. | 12 | | | 15 | | | 16 | | |
| Length (mm) | M | F | T | M | F | T | M | F | T |
| 216-218 | 0 | - | 0 | 1 | 1 | 2 | 2 | 1 | 3 |
| 219-221 | 0 | - | 0 | 1 | 1 | 2 | 1 | 2 | 3 |
| 222-224 | 0 | - | 0 | 1 | 4 | 5 | 2 | 0 | 2 |
| 225-227 | 1 | - | 1 | 1 | 2 | 3 | 2 | 1 | 3 |
| 228-230 | - | - | - | 3 | 0 | 3 | - | 2 | 2 |
| 231-233 | - | - | - | - | 1 | 1 | - | 1 | 1 |
| 234-236 | - | - | - | - | - | - | - | 2 | 2 |
| 237-239 | - | - | - | - | - | - | - | 0 | 0 |
| 240-242 | - | - | - | - | - | - | - | 1 | 1 |
| 243-245 | - | - | - | - | - | - | - | - | - |
| 246-248 | - | - | - | - | - | - | - | - | - |
| 249-251 | - | - | - | - | - | - | - | - | - |
| 252-254 | - | - | - | - | - | - | - | - | - |
| Total | 7 | 10 | 17 | 47 | 53 | 100 | 40 | 40 | 80 |

Appendix Table 1 (cont'd)

| Length (mm) | GTM | GTF | GTU | GT |
|---|---|---|---|---|
| 70-92 | 1 | - | 1 | 2 |
| 93-95 | 0 | - | 0 | 0 |
| 99-101 | 0 | - | 0 | 0 |
| 102-104 | 0 | - | 1 | 1 |
| 105-107 | 0 | 1 | 1 | 2 |
| 108-110 | 0 | 0 | 1 | 1 |
| 111-113 | 0 | 0 | 3 | 3 |
| 114-116 | 0 | 0 | 0 | 0 |
| 117-119 | 0 | 0 | 0 | 0 |
| 120-122 | 0 | 0 | 0 | 0 |
| 123-125 | 0 | 0 | 0 | 0 |
| 126-128 | 0 | 0 | 0 | 0 |
| 129-131 | 0 | 0 | 0 | 0 |
| 132-134 | 1 | 1 | 0 | 2 |
| 135-137 | 3 | 3 | 0 | 6 |
| 138-140 | 5 | 4 | 0 | 9 |
| 141-143 | 8 | 8 | 0 | 16 |
| 144-146 | 24 | 34 | 0 | 58 |
| 147-149 | 13 | 29 | 1 | 44 |
| 150-152 | 19 | 52 | 1 | 72 |
| 153-155 | 37 | 50 | 1 | 87 |
| 156-158 | 23 | 44 | 1 | 68 |
| 159-161 | 31 | 30 | - | 61 |
| 162-164 | 33 | 36 | - | 69 |
| 165-167 | 27 | 35 | - | 62 |
| 168-170 | 18 | 23 | - | 41 |
| 171-173 | 22 | 22 | - | 44 |
| 174-176 | 28 | 34 | - | 62 |
| 177-179 | 33 | 41 | - | 74 |
| 180-182 | 39 | 38 | - | 77 |
| 182-185 | 55 | 57 | - | 112 |
| 186-188 | 61 | 71 | - | 132 |
| 189-191 | 37 | 55 | - | 92 |
| 192-194 | 67 | 91 | - | 158 |
| 195-197 | 53 | 66 | - | 119 |
| 198-200 | 47 | 70 | - | 117 |
| 201-203 | 24 | 61 | - | 85 |
| 204-206 | 34 | 48 | - | 82 |
| 207-209 | 22 | 39 | - | 61 |
| 210-212 | 25 | 45 | - | 70 |
| 213-215 | 32 | 31 | - | 63 |

Appendix Table 1 (cont'd)

| Length (mm) | GTM | GTF | GTU | GT |
|---|---|---|---|---|
| 216-218 | 18 | 29 | - | 47 |
| 219-221 | 22 | 29 | - | 51 |
| 222-224 | 14 | 36 | - | 50 |
| 225-227 | 22 | 27 | - | 49 |
| 228-230 | 18 | 25 | - | 43 |
| 231-233 | 5 | 17 | - | 22 |
| 234-236 | 5 | 20 | - | 25 |
| 237-239 | 3 | 1 | - | 4 |
| 240-242 | 1 | 8 | - | 9 |
| 243-245 | 0 | 2 | - | 2 |
| 246-248 | 0 | 2 | - | 2 |
| 249-251 | 1 | 1 | - | 2 |
| 252-254 | - | - | - | - |
| Total | 948 | 1,364 | 11 | 2,323 |

Appendix Table 2. Size composition of walleye pollock (Theragra chalcogramma), numbers sampled by haul and sex for M/V MARWOOD Cruise MW81-1 and M/V HOWE BAY Cruise HB81-1, March 9-27, 1981.

| Vessel | MW | | | MW | HB | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Haul no. | 2 | | | 9 | 7 | | | | | | |
| Fork length (cm) | M | F | T | U | M | F | T | GTM | GTF | GTU | GT |
| 23 | 2 | 2 | 4 | - | - | - | - | 2 | 2 | - | 4 |
| 4 | 1 | 5 | 6 | - | - | - | - | 1 | 5 | - | 6 |
| 5 | 8 | 7 | 15 | 1 | - | - | - | 8 | 7 | 1 | 16 |
| 6 | 7 | 8 | 15 | 0 | - | - | - | 7 | 8 | 0 | 15 |
| 7 | 5 | 14 | 19 | 0 | - | - | - | 5 | 14 | 0 | 19 |
| 8 | 3 | 4 | 7 | 1 | 1 | - | 1 | 4 | 4 | 1 | 9 |
| 9 | 5 | 6 | 11 | 16 | 2 | - | 2 | 7 | 6 | 16 | 29 |
| 30 | 2 | 4 | 6 | 22 | 1 | 5 | 6 | 3 | 9 | 22 | 34 |
| 1 | 1 | 1 | 2 | 26 | 3 | 7 | 10 | 4 | 8 | 26 | 38 |
| 2 | 0 | 1 | 1 | 34 | 4 | 19 | 23 | 4 | 20 | 34 | 58 |
| 3 | 0 | 1 | 1 | 7 | 3 | 15 | 18 | 3 | 16 | 7 | 26 |
| 4 | 1 | 0 | 1 | 4 | 3 | 10 | 13 | 6 | 10 | 4 | 20 |
| 5 | 0 | 0 | 0 | 6 | 5 | 8 | 13 | 5 | 8 | 6 | 19 |
| 6 | 0 | 1 | 1 | 2 | 6 | 6 | 12 | 6 | 7 | 2 | 15 |
| 7 | 1 | - | 1 | 0 | 3 | 13 | 16 | 4 | 13 | 0 | 17 |
| 8 | - | - | - | 3 | 3 | 16 | 19 | 3 | 16 | 3 | 22 |
| 9 | - | - | - | 3 | 3 | 20 | 23 | 3 | 20 | 3 | 26 |
| 40 | - | - | - | 7 | 3 | 15 | 18 | 3 | 15 | 7 | 25 |
| 1 | - | - | - | 6 | 1 | 17 | 18 | 1 | 17 | 6 | 24 |
| 2 | - | - | - | 10 | 0 | 12 | 12 | 0 | 12 | 10 | 22 |
| 3 | - | - | - | 4 | 1 | 10 | 11 | 1 | 10 | 4 | 15 |
| 4 | - | - | - | 3 | 2 | 10 | 12 | 2 | 10 | 3 | 15 |
| 5 | - | - | - | 0 | - | 13 | 13 | - | 13 | 0 | 13 |
| 6 | - | - | - | 2 | - | 7 | 7 | - | 7 | 2 | 9 |
| 7 | - | - | - | 0 | - | 4 | 4 | - | 4 | 0 | 4 |
| 8 | - | - | - | 0 | - | 3 | 3 | - | 3 | 0 | 3 |
| 9 | - | - | - | 1 | - | 1 | 1 | - | 1 | 1 | 2 |
| 50 | - | - | - | - | - | 1 | 1 | - | 1 | - | 1 |
| 51 | - | - | - | - | - | 1 | 1 | - | 1 | - | 1 |
| Total | 36 | 54 | 90 | 158 | 44 | 213 | 257 | 80 | 267 | 158 | 505 |

Appendix Table 3. Size composition of Pacific hake (Merluccius productus), numbers sampled by haul and sex for M/V HOWE BAY Cruise HB81-1, March 9-27, 1981.

| Fork length (cm) | Haul no. 1 | | | 3 | | | 4 | | | GTM | GTF | GT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | M | F | T | M | F | T | M | F | T | | | |
| 20 | - | - | - | - | - | - | - | - | - | - | - | - |
| 1 | 1 | - | 1 | - | - | - | - | - | - | 1 | - | 1 |
| 2 | 0 | 1 | 1 | - | - | - | - | - | - | 0 | 1 | 1 |
| 3 | 0 | 0 | 0 | - | - | - | - | - | - | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 | - | - | - | - | - | - | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | - | - | - | - | - | - | 0 | 0 | 0 |
| 6 | 2 | 0 | 2 | 1 | - | 1 | - | - | - | 3 | 0 | 3 |
| 7 | 5 | 0 | 5 | 2 | 5 | 7 | - | - | - | 7 | 5 | 12 |
| 8 | 11 | 3 | 14 | 2 | 0 | 2 | - | - | - | 13 | 3 | 16 |
| 9 | 31 | 7 | 38 | 11 | 7 | 18 | - | - | - | 42 | 14 | 56 |
| 30 | 77 | 7 | 84 | 13 | 14 | 27 | - | - | - | 90 | 21 | 111 |
| 1 | 72 | 39 | 111 | 17 | 27 | 44 | 1 | - | 1 | 90 | 66 | 156 |
| 2 | 73 | 53 | 126 | 19 | 37 | 56 | 0 | - | 0 | 92 | 90 | 182 |
| 3 | 34 | 29 | 63 | 18 | 43 | 61 | 0 | - | 0 | 52 | 72 | 124 |
| 4 | 15 | 22 | 37 | 17 | 44 | 61 | 0 | - | 0 | 32 | 66 | 98 |
| 5 | 3 | 17 | 20 | 7 | 34 | 41 | 0 | - | 0 | 10 | 51 | 61 |
| 6 | 5 | 12 | 17 | 6 | 25 | 31 | 0 | 1 | 1 | 11 | 38 | 49 |
| 7 | 2 | 3 | 5 | 5 | 17 | 22 | 0 | 2 | 2 | 7 | 22 | 29 |
| 8 | - | 0 | 0 | 0 | 7 | 7 | 0 | 0 | 0 | 0 | 7 | 7 |
| 9 | - | 0 | 0 | 0 | 6 | 6 | 0 | 2 | 2 | 0 | 8 | 8 |
| 40 | - | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 2 | 2 |
| 1 | - | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 10 | 5 | 5 | 10 |
| 2 | - | 1 | 1 | 0 | 0 | 0 | 2 | 7 | 9 | 2 | 8 | 10 |
| 3 | - | - | - | 0 | 1 | 1 | 2 | 12 | 14 | 2 | 13 | 15 |
| 4 | - | - | - | 0 | 0 | 0 | 1 | 17 | 18 | 1 | 17 | 18 |
| 5 | - | - | - | 0 | 0 | 0 | 2 | 9 | 11 | 2 | 9 | 11 |
| 6 | - | - | - | 0 | 0 | 0 | 1 | 19 | 20 | 1 | 19 | 20 |
| 7 | - | - | - | 1 | 1 | 2 | 2 | 8 | 10 | 3 | 9 | 12 |
| 8 | - | - | - | - | 0 | 0 | 2 | 10 | 12 | 2 | 10 | 12 |
| 9 | - | - | - | - | 0 | 0 | 0 | 4 | 4 | 0 | 4 | 4 |
| 50 | - | - | - | - | 0 | 0 | 0 | 6 | 6 | 0 | 6 | 6 |
| 1 | - | - | - | - | 0 | 0 | 0 | 2 | 2 | 0 | 2 | 2 |
| 2 | - | - | - | - | 0 | 0 | 0 | 4 | 4 | 0 | 4 | 4 |
| 3 | - | - | - | - | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 |
| 4 | - | - | - | - | 1 | 1 | - | 1 | 1 | - | 2 | 2 |
| 5 | - | - | - | - | - | - | - | 0 | 0 | - | 0 | 0 |
| 6 | - | - | - | - | - | - | - | 0 | 0 | - | 0 | 0 |
| 7 | - | - | - | - | - | - | - | 1 | 1 | - | 1 | 1 |
| Total | 331 | 194 | 525 | 119 | 271 | 390 | 19 | 110 | 129 | 469 | 575 | 1044 |

Appendix Table 4. Size composition of widow rockfish (Sebastes entomelas), numbers sampled by haul and sex for M/V MARWOOD Cruise MW81-1, March 9-27, 1981.

| Fork length (cm) | Haul no. 5 | | | Haul no. 20 | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | M | F | T | M | F | T | GTM | GTF | GT |
| 30 | - | - | - | 1 | 1 | 2 | 1 | 1 | 2 |
| 1 | - | - | - | 0 | 1 | 1 | 0 | 1 | 1 |
| 2 | - | - | - | 2 | 1 | 3 | 2 | 1 | 3 |
| 3 | - | - | - | 6 | 2 | 8 | 6 | 2 | 8 |
| 4 | - | - | - | 9 | 3 | 12 | 9 | 3 | 12 |
| 5 | 1 | - | 1 | 16 | 10 | 26 | 17 | 10 | 27 |
| 6 | 0 | - | 0 | 7 | 2 | 9 | 7 | 2 | 9 |
| 7 | 1 | - | 1 | 18 | 9 | 27 | 19 | 9 | 28 |
| 8 | 2 | 1 | 3 | 14 | 15 | 29 | 16 | 16 | 32 |
| 9 | 10 | 2 | 12 | 9 | 2 | 11 | 19 | 4 | 23 |
| 40 | 9 | 2 | 11 | 4 | 3 | 7 | 13 | 5 | 18 |
| 1 | 8 | 7 | 15 | - | 2 | 2 | 8 | 9 | 17 |
| 2 | 15 | 7 | 22 | - | 3 | 3 | 15 | 10 | 25 |
| 3 | 3 | 5 | 8 | - | 0 | 0 | 3 | 5 | 8 |
| 4 | 15 | 17 | 32 | - | 1 | 1 | 15 | 18 | 33 |
| 5 | 6 | 12 | 18 | - | 1 | 1 | 6 | 13 | 19 |
| 6 | 5 | 12 | 17 | - | - | - | 5 | 12 | 17 |
| 7 | 1 | 8 | 9 | - | - | - | 1 | 8 | 9 |
| 8 | 2 | 7 | 9 | - | - | - | 2 | 7 | 9 |
| 9 | 0 | 5 | 5 | - | - | - | 0 | 5 | 5 |
| 50 | 1 | 3 | 4 | - | - | - | 1 | 3 | 4 |
| 1 | - | 10 | 10 | - | - | - | - | 10 | 10 |
| 2 | - | 3 | 3 | - | - | - | - | 3 | 3 |
| 3 | - | 3 | 3 | - | - | - | - | 3 | 3 |
| 4 | - | 0 | 0 | - | - | - | - | 0 | 0 |
| 5 | - | 1 | 1 | - | - | - | - | 1 | 1 |
| Total | 79 | 105 | 184 | 86 | 56 | 142 | 165 | 161 | 326 |

Appendix Table 5. Herring length at maturity compositions by locality and date.

| Locality: | SE corner Big Bank | | | | | | Finger Bank | | | | | | Finger Bank | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vessel-tow: | HB-9,10 | | | | | | MW-4 | | | | | | HB-11,12 | | | | | |
| Date: | March 23, 24/81 | | | | | | March 16/81 | | | | | | March 24/81 | | | | | |
| | Maturity | | | | | | Maturity | | | | | | Maturity | | | | | |
| Length (mm) | 1 | 2 | 5 | 7 | 8 | Total | 1 | 2 | 5 | 7 | 8 | Total | 1 | 2 | 5 | 7 | 8 | Total |
| 90-92 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 93-95 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 96-98 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 99-101 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 102-104 | - | - | - | - | - | - | 1 | - | - | - | - | 1 | - | - | - | - | - | - |
| 105-107 | - | - | - | - | - | - | 0 | - | - | - | - | 0 | - | - | - | - | - | - |
| 108-110 | - | - | - | - | - | - | 1 | - | - | - | - | 1 | - | - | - | - | - | - |
| 111-113 | - | - | - | - | - | - | 0 | - | - | - | - | 0 | - | - | - | - | - | - |
| 114-116 | - | - | - | - | - | - | 0 | - | - | - | - | 0 | - | - | - | - | - | - |
| 117-119 | - | - | - | - | - | - | 0 | - | - | - | - | 0 | - | - | - | - | - | - |
| 120-122 | - | - | - | - | - | - | 0 | - | - | - | - | 0 | - | - | - | - | - | - |
| 123-125 | - | - | - | - | - | - | 0 | - | - | - | - | 0 | - | - | - | - | - | - |
| 126-128 | - | - | - | - | - | - | 0 | - | - | - | - | 0 | - | - | - | - | - | - |
| 129-131 | - | - | - | - | - | - | 0 | - | - | - | - | 0 | - | - | - | - | - | - |
| 132-134 | 2 | - | - | - | - | 2 | 0 | - | - | - | - | 0 | - | - | - | - | - | - |
| 135-137 | 1 | - | - | - | - | 1 | 1 | - | - | - | - | 1 | - | - | - | - | - | - |
| 138-140 | 2 | - | - | - | - | 2 | 3 | - | - | - | - | 3 | - | - | - | - | - | - |
| 141-143 | 2 | - | - | - | - | 2 | 9 | - | - | - | - | 9 | - | - | - | - | - | - |
| 144-146 | - | - | - | 1 | 3 | 4 | 9 | - | - | - | - | 9 | - | - | - | - | - | - |
| 147-149 | - | - | - | 4 | 3 | 7 | 15 | - | - | - | - | 15 | - | - | - | - | - | - |
| 150-152 | - | - | 1 | 2 | 5 | 8 | 15 | - | - | - | 1 | 16 | - | - | - | - | - | - |
| 153-155 | - | - | 0 | 1 | 2 | 3 | 12 | - | - | - | 4 | 16 | - | - | - | - | 1 | 2 |
| 156-158 | - | - | 0 | 4 | 3 | 7 | 3 | - | 1 | - | 1 | 5 | - | - | - | 1 | - | 1 |
| 159-161 | - | - | 0 | 5 | 1 | 6 | 6 | - | 0 | - | 1 | 7 | - | - | - | 1 | - | 1 |
| 162-164 | - | - | 1 | 6 | 1 | 8 | 1 | - | 1 | - | 4 | 6 | - | - | - | 3 | - | 3 |
| 165-167 | - | - | 0 | 8 | 0 | 8 | - | - | 0 | 1 | 1 | 2 | - | - | 1 | 0 | - | 1 |
| 168-170 | - | - | 0 | 6 | 0 | 6 | - | - | 0 | 0 | 4 | 4 | - | - | 0 | 2 | - | 2 |
| 171-173 | - | - | 1 | 11 | 1 | 13 | - | - | 0 | 0 | 0 | 0 | - | - | 0 | 4 | - | 4 |

Appendix Table 5 (cont'd)

| Locality: | SE corner Big Bank | | | | | | Finger Bank | | | | | | Finger Bank | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vessel-tow: | HB-9,10 | | | | | | MW-4 | | | | | | HB-11,12 | | | | | |
| Date: | March 23, 24/81 | | | | | | March 16/81 | | | | | | March 24/81 | | | | | |
| | Maturity | | | | | | Maturity | | | | | | Maturity | | | | | |
| Length (mm) | 1 | 2 | 5 | 7 | 8 | Total | 1 | 2 | 5 | 7 | 8 | Total | 1 | 2 | 5 | 7 | 8 | Total |
| 174-176 | - | - | 1 | 11 | 1 | 13 | - | - | 1 | 1 | 0 | 2 | - | - | 0 | 8 | - | 8 |
| 177-179 | - | - | 1 | 10 | 1 | 12 | - | - | 0 | 0 | 1 | 1 | - | - | 0 | 4 | - | 4 |
| 180-182 | - | - | 1 | 13 | - | 14 | - | - | 0 | 0 | - | 0 | - | - | 0 | 11 | - | 11 |
| 183-185 | - | - | 1 | 8 | - | 9 | - | - | 0 | 0 | - | 0 | - | - | 0 | 11 | - | 11 |
| 186-188 | - | - | 1 | 11 | - | 12 | - | - | 0 | 0 | - | 0 | - | - | 0 | 7 | - | 7 |
| 189-191 | - | - | 0 | 13 | - | 13 | - | - | 0 | 0 | - | 0 | - | - | 0 | 9 | - | 9 |
| 192-194 | - | - | 1 | 5 | - | 6 | - | - | 0 | 0 | - | 0 | - | - | 0 | 8 | - | 8 |
| 195-197 | - | - | - | 9 | - | 9 | - | - | 1 | 1 | - | 2 | - | - | 0 | 6 | - | 6 |
| 198-200 | - | - | - | 4 | - | 4 | - | - | - | - | - | - | - | - | 0 | 7 | - | 7 |
| 201-203 | - | - | - | 1 | - | 1 | - | - | - | - | - | - | - | - | 0 | 6 | - | 6 |
| 204-206 | - | - | - | 3 | - | 3 | - | - | - | - | - | - | - | - | 0 | 3 | - | 3 |
| 207-209 | - | - | - | 3 | - | 3 | - | - | - | - | - | - | - | - | 0 | 2 | - | 2 |
| 210-212 | - | - | - | 0 | - | 0 | - | - | - | - | - | - | - | - | 0 | 6 | - | 6 |
| 213-215 | - | - | - | 3 | - | 3 | - | - | - | - | - | - | - | - | 0 | 4 | - | 4 |
| 216-218 | - | - | - | 0 | - | 0 | - | - | - | - | - | - | - | - | 0 | 2 | - | 2 |
| 219-221 | - | - | - | 1 | - | 1 | - | - | - | - | - | - | - | - | 0 | 1 | - | 1 |
| 222-224 | - | - | - | 0 | - | 0 | - | - | - | - | - | - | - | - | 0 | 3 | - | 3 |
| 225-227 | - | - | - | 4 | - | 4 | - | - | - | - | - | - | - | - | 0 | 2 | - | 2 |
| 228-230 | - | - | - | 4 | - | 4 | - | - | - | - | - | - | - | - | 0 | 2 | - | 2 |
| 231-233 | - | - | - | 1 | - | 1 | - | - | - | - | - | - | - | - | 1 | - | - | 1 |
| 234-236 | - | - | - | 1 | - | 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| 237-239 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 240-242 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 243-245 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 246-248 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Total fish | 7 | 0 | 9 | 153 | 21 | 190 | 76 | 0 | 4 | 3 | 17 | 100 | 0 | 0 | 2 | 114 | 1 | 117 |
| Percent | 3.7 | 0.0 | 4.7 | 80.5 | 11.1 | 100.0 | 76.0 | 0.0 | 4.0 | 3.0 | 17.0 | 100.0 | 0.0 | 0.0 | 1.7 | 97.4 | 0.9 | 100.0 |

Appendix Table 5 (cont'd)

| Locality: | Swfitaure | | | | | | San Juan | | | | | | San Juan | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vessel-tow: | MW-18,20 | | | | | | MW-2,3 | | | | | | MW-17 | | | | | |
| Date: | March 23/81 | | | | | | March 15/81 | | | | | | March 22/81 | | | | | |
| | Maturity | | | | | | Maturity | | | | | | Maturity | | | | | |
| Length (mm) | 1 | 2 | 5 | 7 | 8 | Total | 1 | 2 | 5 | 7 | 8 | Total | 1 | 2 | 5 | 7 | 8 | Total |
| 90-92 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 93-95 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 96-98 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 99-101 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 102-104 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 105-107 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 108-110 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 111-113 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 114-116 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 117-119 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 120-122 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 123-125 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 126-128 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 129-131 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 132-134 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 135-137 | - | - | - | - | - | - | - | - | - | - | - | - | 1 | - | - | - | - | 1 |
| 138-140 | - | - | - | - | - | - | - | - | - | - | - | - | 3 | - | - | - | - | 3 |
| 141-143 | - | - | - | - | - | - | 1 | - | - | - | - | 1 | 3 | - | - | - | - | 3 |
| 144-146 | - | - | - | - | - | - | 1 | - | - | - | - | 1 | 6 | - | - | - | 6 | 12 |
| 147-149 | - | - | - | - | - | - | - | - | - | - | - | 0 | 2 | - | - | - | 5 | 7 |
| 150-152 | - | - | - | - | - | - | - | - | 1 | - | - | 1 | 1 | - | - | - | 7 | 8 |
| 153-155 | - | - | - | - | - | - | - | - | 0 | - | - | 0 | - | - | - | 3 | 7 | 10 |
| 156-158 | - | - | - | - | - | - | - | - | 0 | - | - | 0 | - | - | - | 1 | 2 | 3 |
| 159-161 | - | - | - | - | - | - | - | - | 0 | - | - | 0 | - | - | - | 3 | 0 | 3 |
| 162-164 | - | - | - | 1 | 1 | 2 | - | - | 0 | - | - | 0 | - | - | 2 | 0 | 0 | 2 |
| 165-167 | - | - | - | 2 | 0 | 2 | - | - | 0 | - | - | 0 | - | - | 0 | 0 | 1 | 1 |
| 168-170 | - | - | - | 0 | 0 | 0 | - | - | 0 | 1 | - | 1 | - | - | 0 | 0 | 0 | 0 |
| 171-173 | - | - | - | 1 | 0 | 1 | - | - | 0 | 0 | - | 0 | - | - | 0 | 0 | 0 | 0 |

Appendix Table 5 (cont'd)

| Locality: | Swiftsure | | | | | | San Juan | | | | | | San Juan | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vessel-tow: | MV-18,20 | | | | | | MV-2,3 | | | | | | MV-17 | | | | | |
| Date: | March 23/81 | | | | | | March 15/81 | | | | | | March 22/81 | | | | | |
| | Maturity | | | | | | Maturity | | | | | | Maturity | | | | | |
| Length (mm) | 1 | 2 | 5 | 7 | 8 | Total | 1 | 2 | 5 | 7 | 8 | Total | 1 | 2 | 5 | 7 | 8 | Total |
| 174-176 | - | - | - | 6 | 0 | 6 | - | - | 0 | 0 | - | 0 | - | - | 1 | 0 | 0 | 1 |
| 177-179 | - | - | - | 5 | 0 | 5 | - | - | 0 | 0 | - | 0 | - | - | 0 | 2 | 0 | 2 |
| 180-182 | - | - | - | 10 | 0 | 10 | - | - | 0 | 7 | - | 7 | - | - | 0 | 0 | 0 | 0 |
| 183-185 | - | - | - | 16 | 0 | 16 | - | - | 0 | 4 | - | 4 | - | - | 0 | 2 | 0 | 2 |
| 186-188 | - | - | - | 7 | 0 | 7 | - | - | 0 | 2 | - | 2 | - | - | 1 | 0 | 0 | 1 |
| 189-191 | - | - | - | 16 | 0 | 16 | - | - | 0 | 8 | - | 8 | - | - | - | 2 | 0 | 2 |
| 192-194 | - | - | - | 11 | 0 | 11 | - | - | 0 | 3 | - | 3 | - | - | - | 1 | 0 | 1 |
| 195-197 | - | - | - | 13 | 1 | 14 | - | - | 1 | 4 | - | 5 | - | - | - | 1 | 0 | 1 |
| 198-200 | - | - | - | 13 | - | 13 | - | - | - | 4 | - | 4 | - | - | - | - | - | - |
| 201-203 | - | - | - | 12 | - | 12 | - | - | - | 4 | - | 4 | - | - | - | - | - | - |
| 204-206 | - | - | - | 12 | - | 12 | - | - | - | 3 | - | 3 | - | - | - | - | - | - |
| 207-209 | - | - | - | 9 | - | 9 | - | - | - | 5 | - | 5 | - | - | - | - | - | - |
| 210-212 | - | - | - | 8 | - | 8 | - | - | - | 2 | - | 2 | - | - | - | - | - | - |
| 213-215 | - | - | - | 8 | - | 8 | - | - | - | 2 | - | 2 | - | - | - | - | - | - |
| 216-218 | - | - | - | 10 | - | 10 | - | - | - | 5 | - | 5 | - | - | - | - | - | - |
| 219-221 | - | - | - | 9 | - | 9 | - | - | - | 2 | - | 2 | - | - | - | - | - | - |
| 222-224 | - | - | - | 8 | - | 8 | - | - | - | 1 | - | 1 | - | - | - | - | - | - |
| 225-227 | - | - | - | 8 | - | 8 | - | - | - | 2 | - | 2 | - | - | - | - | - | - |
| 228-230 | - | - | - | 8 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| 231-233 | - | - | - | 3 | - | 3 | - | - | - | - | - | - | - | - | - | - | - | - |
| 234-236 | - | - | - | 2 | - | 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| 237-239 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 240-242 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 243-245 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 246-248 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Total fish | 0 | 0 | 0 | 198 | 2 | 200 | 2 | 0 | 2 | 59 | 0 | 63 | 16 | 0 | 4 | 15 | 28 | 63 |
| Percent | 0.0 | 0.0 | 0.0 | 99.0 | 1.0 | 100.0 | 3.1 | 0.0 | 3.1 | 93.8 | 0.0 | 100.0 | 25.4 | 0.0 | 6.4 | 23.8 | 44.4 | 100.0 |

Appendix Table 5 (cont'd)

| Locality: | Loudoun Canyon | | | | | | Juan de Fuca Canyon to Nitinat Canyon | | | | | | Juan de Fuca Canyon to Nitinat Canyon | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vessel-tow: | GBR-1,3 | | | | | | GBR-10,11,12,13 | | | | | | MV-15,16 | | | | | |
| Date: | March 21-22/81 | | | | | | March 25-26/81 | | | | | | March 21-22/81 | | | | | |
| | Maturity | | | | | | Maturity | | | | | | Maturity | | | | | |
| Length (mm) | 1 | 2 | 5 | 7 | 8 | Total | 1 | 2 | 5 | 7 | 8 | Total | 1 | 2 | 5 | 7 | 8 | Total |
| 90-92 | 2 | – | – | – | – | 2 | – | – | – | – | – | – | – | – | – | – | – | – |
| 93-95 | 0 | – | – | – | – | 0 | – | – | – | – | – | – | – | – | – | – | – | – |
| 96-98 | 0 | – | – | – | – | 0 | – | – | – | – | – | – | – | – | – | – | – | – |
| 99-101 | 1 | – | – | – | – | 1 | – | – | – | – | – | – | – | – | – | – | – | – |
| 102-104 | 1 | – | – | – | – | 1 | – | – | – | – | – | – | – | – | – | – | – | – |
| 105-107 | 0 | – | – | – | – | 0 | – | – | – | – | – | – | – | – | – | – | – | – |
| 108-110 | 0 | – | – | – | – | 0 | – | – | – | – | – | – | 1 | – | – | – | – | 1 |
| 111-113 | 0 | – | – | – | – | 0 | – | – | – | – | – | – | 2 | – | – | – | – | 2 |
| 114-116 | 0 | – | – | – | – | 0 | – | – | – | – | – | – | 0 | – | – | – | – | 0 |
| 117-119 | 0 | – | – | – | – | 0 | – | – | – | – | – | – | 0 | – | – | – | – | 0 |
| 120-122 | 0 | – | – | – | – | 0 | – | – | – | – | – | – | 0 | – | – | – | – | 0 |
| 123-125 | 0 | – | – | – | – | 0 | – | – | – | – | – | – | 0 | – | – | – | – | 0 |
| 126-128 | 0 | – | – | – | – | 0 | – | – | – | – | – | – | 0 | – | – | – | – | 0 |
| 129-131 | 0 | – | – | – | – | 0 | – | – | – | – | – | – | 0 | – | – | – | – | 0 |
| 132-134 | 0 | – | – | – | – | 0 | – | – | – | – | – | – | 1 | – | – | – | – | 1 |
| 135-137 | 1 | – | – | – | – | 1 | – | – | – | – | – | – | 3 | – | – | – | – | 3 |
| 138-140 | 1 | – | – | – | – | 1 | – | – | – | – | – | – | 3 | – | – | – | – | 3 |
| 141-143 | 1 | – | 1 | 1 | – | 3 | 4 | – | – | – | – | 4 | 6 | – | – | – | – | 6 |
| 144-146 | 7 | – | 1 | 1 | 2 | 11 | 0 | – | – | – | 1 | 1 | 22 | – | – | 2 | 1 | 25 |
| 147-149 | 7 | 1 | 0 | 0 | 4 | 12 | 3 | – | – | 1 | 1 | 5 | 6 | – | – | 4 | 0 | 10 |
| 150-152 | 7 | 0 | 0 | 8 | 3 | 18 | 3 | 1 | – | 1 | 6 | 11 | 10 | – | – | 5 | 6 | 21 |
| 153-155 | 4 | 2 | 0 | 8 | 1 | 15 | – | 3 | – | 2 | 3 | 8 | 8 | – | – | 2 | 9 | 19 |
| 156-158 | 3 | 1 | 0 | 5 | 3 | 12 | – | 4 | – | 1 | 3 | 8 | 7 | – | – | 3 | 7 | 17 |
| 159-161 | 2 | 0 | 0 | 7 | 6 | 15 | – | 4 | – | 6 | 5 | 15 | 2 | – | 1 | 7 | 8 | 18 |
| 162-164 | – | 0 | 0 | 5 | 4 | 9 | – | 1 | 1 | 2 | 8 | 12 | 1 | – | 0 | 8 | 5 | 14 |
| 165-167 | – | 1 | 0 | 2 | 7 | 10 | – | 0 | 0 | 4 | 1 | 5 | – | – | 1 | 5 | 4 | 10 |
| 168-170 | – | 1 | 0 | 7 | 3 | 11 | – | 1 | 0 | 6 | 1 | 8 | – | – | 0 | 3 | 1 | 4 |
| 171-173 | – | – | 1 | 5 | 4 | 10 | – | 0 | 1 | 8 | 1 | 10 | – | – | 0 | 3 | 1 | 4 |
| | | | | | | | | | | | | | | | | 4 | 0 | 4 |

Appendix Table 5 (cont'd)

| Locality: | Loudoun Canyon | | | | | | Juan de Fuca Canyon to Nitinat Canyon | | | | | | Juan de Fuca Canyon to Nitinat Canyon | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vessel-tow: | GBR-1,3 | | | | | | GBR-10,11,12,13 | | | | | | MW-15,16 | | | | | |
| Date: | March 21-22/81 | | | | | | March 25-26/81 | | | | | | March 21-22/81 | | | | | |
| | Maturity | | | | | | Maturity | | | | | | Maturity | | | | | |
| Length (mm) | 1 | 2 | 5 | 7 | 8 | Total | 1 | 2 | 5 | 7 | 8 | Total | 1 | 2 | 5 | 7 | 8 | Total |
| 174-176 | – | – | – | 6 | 5 | 11 | – | 0 | 0 | 5 | 0 | 5 | – | – | 0 | 1 | 0 | 1 |
| 177-179 | – | – | – | 1 | 3 | 4 | – | 1 | 2 | 8 | 2 | 13 | – | – | 0 | 2 | 0 | 2 |
| 180-182 | – | – | – | 4 | 3 | 7 | – | – | 1 | 17 | 3 | 21 | – | – | 0 | 1 | 0 | 1 |
| 183-185 | – | – | – | 8 | 3 | 11 | – | – | 4 | 19 | 1 | 24 | – | – | 0 | 1 | 0 | 1 |
| 186-188 | – | – | – | 3 | 0 | 3 | – | – | 0 | 9 | 2 | 11 | – | – | 0 | 0 | 0 | 0 |
| 189-191 | – | – | – | 6 | 3 | 9 | – | – | 3 | 28 | 0 | 31 | – | – | 0 | 1 | 1 | 2 |
| 192-194 | – | – | – | 10 | 0 | 10 | – | – | 1 | 15 | 1 | 17 | – | – | 0 | 0 | – | 0 |
| 195-197 | – | – | – | 2 | 1 | 3 | – | – | 2 | 18 | 0 | 20 | – | – | 0 | 0 | – | 0 |
| 198-200 | – | – | – | 1 | 1 | 2 | – | – | 0 | 11 | 4 | 15 | – | – | 0 | 0 | – | 0 |
| 201-203 | – | – | – | 1 | – | 1 | – | – | 0 | 14 | 1 | 15 | – | – | 0 | 1 | – | 1 |
| 204-206 | – | – | – | 3 | – | 3 | – | – | 1 | 14 | 0 | 15 | – | – | 0 | 0 | – | 0 |
| 207-209 | – | – | – | 1 | – | 1 | – | – | 0 | 12 | 0 | 12 | – | – | 0 | 0 | – | 0 |
| 210-212 | – | – | – | 0 | – | 0 | – | – | 1 | 16 | 0 | 17 | – | – | 0 | 0 | – | 0 |
| 213-215 | – | – | – | 2 | – | 2 | – | – | 1 | 15 | 0 | 16 | – | – | 0 | 0 | – | 0 |
| 216-218 | – | – | – | 0 | – | 0 | – | – | 0 | 7 | 0 | 7 | – | – | 0 | 0 | – | 0 |
| 219-221 | – | – | – | 0 | – | 0 | – | – | 1 | 16 | 0 | 17 | – | – | 0 | 1 | – | 1 |
| 222-224 | – | – | – | 0 | – | 0 | – | – | 2 | 8 | 0 | 10 | – | – | 0 | 0 | – | 0 |
| 225-227 | – | – | – | 0 | – | 0 | – | – | 2 | 9 | 0 | 11 | – | – | 1 | 1 | – | 2 |
| 228-230 | – | – | – | 1 | – | 1 | – | – | 2 | 10 | 1 | 13 | – | – | 0 | 0 | – | 0 |
| 231-233 | – | – | – | – | – | – | – | – | 2 | 3 | 1 | 6 | – | – | 0 | 1 | – | 1 |
| 234-236 | – | – | – | – | – | – | – | – | 1 | 8 | 1 | 10 | – | – | 0 | – | – | 0 |
| 237-239 | – | – | – | – | – | – | – | – | – | 2 | – | 2 | – | – | 0 | – | – | 0 |
| 240-242 | – | – | – | – | – | – | – | – | – | 4 | – | 4 | – | – | 0 | – | – | 0 |
| 243-245 | – | – | – | – | – | – | – | – | – | 0 | – | 0 | – | – | 0 | – | – | 0 |
| 246-248 | – | – | – | – | – | – | – | – | – | 1 | – | 1 | – | – | 1 | – | – | 1 |
| Total fish | 37 | 6 | 3 | 98 | 56 | 200 | 10 | 15 | 28 | 300 | 47 | 400 | 72 | 0 | 4 | 56 | 43 | 175 |
| Percent | 19.0 | 3.0 | 1.0 | 49.0 | 28.0 | 100.0 | 2.5 | 3.8 | 7.0 | 75.0 | 11.8 | 100.0 | 41.2 | 0.0 | 2.2 | 32.0 | 24.6 | 100.0 |

Appendix Table 5 (cont'd)

| Locality: | Prairies | | | | | | Nitinat Canyon to Barkley Canyon | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vessel-tow: | GBR-9,14; MW-27 | | | | | | GBR-6,7,8; HB-15,16; MW-14 | | | | | |
| Date: | March 25-26/81 | | | | | | March 24-26/81 | | | | | |
| | Maturity | | | | | | Maturity | | | | | |
| Length (mm) | 1 | 2 | 5 | 7 | 8 | Total | 1 | 2 | 5 | 7 | 8 | Total |
| 90-92 | - | - | - | - | - | - | - | - | - | - | - | - |
| 93-95 | - | - | - | - | - | - | - | - | - | - | - | - |
| 96-98 | - | - | - | - | - | - | - | - | - | - | - | - |
| 99-101 | - | - | - | - | - | - | - | - | - | - | - | - |
| 102-104 | - | - | - | - | - | - | - | - | - | - | - | - |
| 105-107 | - | - | - | - | - | - | - | - | - | - | - | - |
| 108-110 | - | - | - | - | - | - | - | - | - | - | - | - |
| 111-113 | - | - | - | - | - | - | - | - | - | - | - | - |
| 114-116 | - | - | - | - | - | - | - | - | - | - | - | - |
| 117-119 | - | - | - | - | - | - | - | - | - | - | - | - |
| 120-122 | - | - | - | - | - | - | - | - | - | - | - | - |
| 123-125 | - | - | - | - | - | - | - | - | - | - | - | - |
| 126-128 | - | - | - | - | - | - | - | - | - | - | - | - |
| 129-131 | 1 | - | - | - | - | 1 | - | - | - | - | - | - |
| 132-134 | 0 | - | - | - | - | 0 | - | - | - | - | - | - |
| 135-137 | 0 | - | - | - | - | 0 | - | - | - | - | - | - |
| 138-140 | 0 | - | - | - | - | 0 | - | - | - | - | - | - |
| 141-143 | 0 | - | - | - | - | 0 | 2 | - | - | - | - | 2 |
| 144-146 | 0 | - | - | - | - | 0 | 1 | - | - | - | - | 1 |
| 147-149 | 0 | - | - | - | - | 0 | 2 | - | - | 1 | - | 3 |
| 150-152 | 1 | - | - | - | - | 1 | 3 | 2 | - | 0 | - | 5 |
| 153-155 | 1 | - | - | - | - | 1 | 1 | 0 | - | 2 | - | 3 |
| 156-158 | 0 | - | - | - | 1 | 1 | 0 | 0 | - | 4 | 2 | 6 |
| 159-161 | 1 | - | - | 2 | 1 | 4 | 2 | 0 | - | 1 | 2 | 5 |
| 162-164 | - | - | - | 1 | 2 | 3 | - | 5 | - | 3 | 0 | 8 |
| 165-167 | - | - | - | 1 | 2 | 3 | - | 0 | - | 6 | 0 | 6 |
| 168-170 | - | - | - | 2 | 1 | 3 | - | 0 | - | 5 | 0 | 5 |
| 171-173 | - | - | - | 2 | 1 | 3 | - | 3 | - | 13 | 1 | 17 |

Appendix Table 5 (cont'd)

| Locality: | Prairies | | | | | | Nitinat Canyon to Barkley Canyon | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vessel-tow: | GBR-9,14; MW-27 | | | | | | GBR-6,7,8; HB-15,16; MW-14 | | | | | |
| Date: | March 25-26/81 | | | | | | March 24-26/81 | | | | | |
| | Maturity | | | | | | Maturity | | | | | |
| Length (mm) | 1 | 2 | 5 | 7 | 8 | Total | 1 | 2 | 5 | 7 | 8 | Total |
| 174-176 | - | - | - | 4 | 2 | 6 | - | 0 | 1 | 17 | 3 | 21 |
| 177-179 | - | - | - | 5 | 0 | 5 | - | 2 | 0 | 23 | 4 | 29 |
| 180-182 | - | - | - | 8 | 0 | 8 | - | 2 | 1 | 28 | 2 | 33 |
| 183-185 | - | - | 1 | 14 | 0 | 15 | - | - | 0 | 36 | 3 | 39 |
| 186-188 | - | - | - | 9 | 0 | 9 | - | - | 1 | 37 | 2 | 40 |
| 189-191 | - | - | - | 22 | 1 | 23 | - | - | 0 | 38 | 7 | 45 |
| 192-194 | - | - | - | 10 | 2 | 12 | - | - | 0 | 47 | 4 | 51 |
| 195-197 | - | - | - | 12 | 0 | 12 | - | - | 0 | 40 | 5 | 45 |
| 198-200 | - | - | - | 11 | 0 | 11 | - | - | 0 | 27 | 2 | 29 |
| 201-203 | - | - | - | 16 | 1 | 17 | - | - | 0 | 22 | 3 | 25 |
| 204-206 | - | - | - | 4 | 0 | 4 | - | - | 0 | 17 | 1 | 18 |
| 207-209 | - | - | - | 13 | 0 | 13 | - | - | 0 | 20 | 5 | 25 |
| 210-212 | - | - | - | 11 | 2 | 13 | - | - | 0 | 16 | 1 | 17 |
| 213-215 | - | - | - | 9 | 0 | 9 | - | - | 0 | 19 | 2 | 21 |
| 216-218 | - | - | - | 8 | 0 | 8 | - | - | 0 | 14 | 1 | 15 |
| 219-221 | - | - | - | 10 | 0 | 10 | - | - | 0 | 10 | 0 | 10 |
| 222-224 | - | - | - | 10 | 0 | 10 | - | - | 0 | 17 | 1 | 18 |
| 225-227 | - | - | - | 3 | 0 | 3 | - | - | 1 | 16 | 0 | 17 |
| 228-230 | - | - | - | 1 | 1 | 2 | - | - | - | 13 | 1 | 14 |
| 231-233 | - | - | - | 1 | 0 | 1 | - | - | - | 7 | 1 | 8 |
| 234-236 | - | - | - | 0 | 0 | 0 | - | - | - | 9 | 3 | 12 |
| 237-239 | - | - | - | 0 | 0 | 0 | - | - | - | 2 | 0 | 2 |
| 240-242 | - | - | - | - | 1 | 1 | - | - | - | 4 | 0 | 4 |
| 243-245 | - | - | - | - | - | - | - | - | - | 2 | 0 | 2 |
| 246-248 | - | - | - | - | - | - | - | - | - | 0 | 1 | 1 |
| 249-251 | - | - | - | - | - | - | - | - | - | 1 | 0 | 1 |
| Total fish | 4 | 0 | 1 | 189 | 18 | 212 | 11 | 14 | 4 | 517 | 57 | 603 |
| Percent | 1.8 | 0.0 | 0.5 | 89.2 | 8.5 | 100.0 | 1.8 | 2.3 | 0.8 | 85.7 | 9.4 | 100.0 |

Appendix Table 6. Percent maturity and mean lengths of herring sampled by locality and date.

| Locality | Date 03/81 | Number sampled | Percent maturity stage[1] | | | | | | | | Mean length (mm) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5[2] | 6 | 7 | 8 | |
| San Juan | 15 | 63 | 3 | - | - | - | 3 | - | 94 | - | 196.1 |
| San Juan | 22 | 63 | 26 | - | - | - | 6 | - | 24 | 44 | 153.0 |
| Swiftsure | 23 | 200 | - | - | - | - | - | - | 99 | 1 | 200.8 |
| Finger Bank | 16 | 100 | 76 | - | - | - | 4 | - | 3 | 17 | 152.6 |
| Finger Bank | 24 | 117 | - | - | - | - | 2 | - | 97 | 1 | 193.2 |
| S.E. corner Big Bank | 23,24 | 190 | 4 | - | - | - | 5 | - | 80 | 11 | 178.0 |
| Prairie Ground | 25,26 | 212 | 2 | - | - | - | 1 | - | 89 | 8 | 196.7 |
| Loudoun Canyon | 21,22 | 200 | 19 | 3 | - | - | 1 | - | 49 | 28 | 166.3 |
| Nitinat Canyon to Barkley Canyon | 24-26 | 603 | 2 | 2 | - | - | 1 | - | 86 | 9 | 195.7 |
| Juan de Fuca Canyon to Nitinat Canyon | 21,22 | 175 | 41 | - | - | - | 2 | - | 32 | 25 | 153.9 |
| Juan de Fuca Canyon to Nitinat Canyon | 25,26 | 400 | 2 | 4 | - | - | 7 | - | 75 | 12 | 193.7 |
| Average[3]/total | | 2,323 | 10 | 2 | 0 | 0 | 3 | 0 | 73 | 12 | 180.0 |

[1]Maturity stage description, Appendix Table 10.
[2]Gonads ripe to resorbing (unspawned).
[3]Based on total numbers converted to percentage, not average of sample percentages.

Appendix Table 7. Herring length at age compositions by sample.

| Vessel-cruise-tow: | GRB81-3-1 | | | | GRR81-3-3 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Len. freq. (mm) | Age | | | | Age | | | | | | |
| | II | III | IV | Total | II | III | IV | V | VI | VII | Total |
| 132-134 | - | - | - | - | - | - | - | - | - | - | - |
| 135-137 | - | - | - | - | - | - | - | - | - | - | - |
| 138-140 | - | - | - | - | - | - | - | - | - | - | - |
| 141-143 | - | - | - | - | - | - | - | - | - | - | - |
| 144-146 | 1 | - | - | 1 | 2 | - | - | - | - | - | 2 |
| 147-149 | 3 | - | - | 3 | 6 | - | - | - | - | - | 6 |
| 150-152 | 5 | - | - | 5 | 4 | - | - | - | - | - | 4 |
| 153-155 | 4 | - | - | 4 | 9 | - | - | - | - | - | 9 |
| 156-158 | 5 | - | - | 5 | 4 | 3 | - | - | - | - | 7 |
| 159-161 | 4 | - | - | 4 | 1 | 1 | - | - | - | - | 2 |
| 162-164 | 3 | - | - | 3 | 4 | 3 | - | - | - | - | 7 |
| 165-167 | 2 | 3 | - | 5 | 1 | 3 | - | - | - | - | 4 |
| 168-170 | 2 | 1 | - | 3 | 1 | 1 | - | - | - | - | 2 |
| 171-173 | - | 4 | - | 4 | - | 3 | - | - | - | - | 3 |
| 174-176 | - | 3 | - | 3 | - | 2 | - | - | - | - | 2 |
| 177-179 | - | 3 | - | 3 | - | 5 | - | - | - | - | 5 |
| 180-182 | - | 4 | - | 4 | - | 1 | - | - | - | - | 1 |
| 183-185 | - | 5 | - | 5 | - | 3 | 1 | - | - | - | 4 |
| 186-188 | - | 0 | 1 | 1 | - | 1 | 1 | - | - | - | 1 |
| 189-191 | - | 2 | 2 | 4 | - | 1 | 0 | - | - | - | 2 |
| 192-194 | - | 0 | 4 | 4 | - | 2 | 1 | - | - | - | 3 |
| 195-197 | - | 1 | 0 | 1 | - | 1 | 3 | - | - | - | 4 |
| 198-200 | - | - | 1 | 1 | - | - | 1 | - | - | - | 1 |
| 201-203 | - | - | 1 | 1 | - | - | 1 | - | - | - | 1 |
| 204-206 | - | - | - | - | - | - | 0 | - | 1 | 1 | 2 |
| 207-209 | - | - | - | - | - | - | 0 | - | - | 0 | 0 |
| 210-212 | - | - | - | - | - | - | 1 | - | - | 0 | 1 |
| 213-215 | - | - | - | - | - | - | - | - | - | 0 | 0 |
| 216-218 | - | - | - | - | - | - | - | - | - | 0 | 0 |
| 219-221 | - | - | - | - | - | - | - | - | - | 0 | 0 |
| 222-224 | - | - | - | - | - | - | - | - | - | 0 | 0 |
| 225-227 | - | - | - | - | - | - | - | - | - | 0 | 0 |
| 228-230 | - | - | - | - | - | - | - | - | - | 0 | 0 |
| 231-233 | - | - | - | - | - | - | - | - | - | 1 | 1 |
| 234-236 | - | - | - | - | - | - | - | - | - | - | - |
| 237-239 | - | - | - | - | - | - | - | - | - | - | - |
| 240-242 | - | - | - | - | - | - | - | - | - | - | - |
| 243-245 | - | - | - | - | - | - | - | - | - | - | - |
| 246-248 | - | - | - | - | - | - | - | - | - | - | - |
| Total aged | 29 | 26 | 9 | 64 | 32 | 30 | 9 | 0 | 1 | 2 | 74 |
| Not aged = | | | | 36 | | | | | | | 26 |
| Total sample: | | | | 100 | | | | | | | 100 |
| Mean length | 156.7 | 178.2 | 193.3 | | 157.8 | 171.9 | 198.0 | - | 205.0 | 218.5 | |

Appendix Table 7 (cont'd)

| Vessel-cruise-tow: | GBR81-3-6 | | | | | | | GBR81-3-7 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Len. freq. (mm) | Age | | | | | | | Age | | | | | |
| | II | III | IV | V | VI | VII | Total | II | III | IV | V | VI | Total |
| 132-134 | – | – | – | – | – | – | – | – | – | – | – | – | – |
| 135-137 | – | – | – | – | – | – | – | – | – | – | – | – | – |
| 138-140 | – | – | – | – | – | – | – | – | – | – | – | – | – |
| 141-143 | – | – | – | – | – | – | – | – | – | – | – | – | – |
| 144-146 | – | – | – | – | – | – | – | – | – | – | – | – | – |
| 147-149 | – | – | – | – | – | – | – | 1 | – | – | – | – | 1 |
| 150-152 | – | – | – | – | – | – | – | 0 | – | – | – | – | 0 |
| 153-155 | – | – | – | – | – | – | – | 0 | – | – | – | – | 0 |
| 156-158 | – | – | – | – | – | – | – | 3 | – | – | – | – | 3 |
| 159-161 | – | – | – | – | – | – | – | 0 | – | – | – | – | 0 |
| 162-164 | 1 | – | – | – | – | – | 1 | 1 | – | – | – | – | 1 |
| 165-167 | 2 | 1 | – | – | – | – | 3 | – | 1 | – | – | – | 1 |
| 168-170 | – | 2 | – | – | – | – | 2 | – | 0 | – | – | – | 0 |
| 171-173 | – | 7 | – | – | – | – | 7 | – | 2 | – | – | – | 2 |
| 174-176 | – | 4 | – | – | – | – | 4 | – | 4 | – | – | – | 4 |
| 177-179 | – | 16 | 1 | – | – | – | 17 | – | 3 | – | – | – | 3 |
| 180-182 | – | 6 | 2 | – | – | – | 8 | – | 3 | – | – | – | 3 |
| 183-185 | – | 6 | 2 | – | – | – | 8 | – | 9 | – | – | – | 9 |
| 186-188 | – | 10 | 0 | 2 | – | – | 12 | – | 2 | 1 | – | – | 3 |
| 189-191 | – | 6 | 3 | 0 | – | – | 9 | – | 6 | 2 | – | – | 8 |
| 192-194 | – | 5 | 2 | 0 | – | – | 7 | – | 4 | 2 | – | – | 6 |
| 195-197 | – | 2 | 6 | 1 | – | – | 9 | – | 3 | 2 | – | – | 5 |
| 198-200 | – | – | 4 | 0 | – | – | 4 | – | 2 | 5 | – | – | 7 |
| 201-203 | – | – | 2 | 1 | – | – | 3 | – | – | 2 | – | 1 | 3 |
| 204-206 | – | – | 1 | 3 | 1 | – | 5 | – | – | 3 | 1 | 0 | 4 |
| 207-209 | – | – | 3 | 0 | 0 | – | 3 | – | – | – | 0 | 0 | 0 |
| 210-212 | – | – | 1 | 0 | 1 | 1 | 3 | – | – | – | 1 | 0 | 1 |
| 213-215 | – | – | – | 1 | 2 | 0 | 3 | – | – | – | – | 1 | 1 |
| 216-218 | – | – | – | 1 | 0 | 0 | 1 | – | – | – | – | 1 | 1 |
| 219-221 | – | – | – | 1 | 0 | 0 | 1 | – | – | – | – | 0 | 0 |
| 222-224 | – | – | – | 1 | 2 | 0 | 3 | – | – | – | – | 0 | 0 |
| 225-227 | – | – | – | – | 1 | 1 | 2 | – | – | – | – | 0 | 0 |
| 228-230 | – | – | – | – | 0 | 1 | 1 | – | – | – | – | 1 | 1 |
| 231-233 | – | – | – | – | 0 | 0 | 0 | – | – | – | – | – | – |
| 234-236 | – | – | – | – | 1 | 2 | 3 | – | – | – | – | – | – |
| 237-239 | – | – | – | – | – | 0 | 0 | – | – | – | – | – | – |
| 240-242 | – | – | – | – | – | 1 | 1 | – | – | – | – | – | – |
| 243-245 | – | – | – | – | – | 0 | 0 | – | – | – | – | – | – |
| 246-248 | – | – | – | – | – | 2 | 2 | – | – | – | – | – | – |
| Total aged | 3 | 65 | 27 | 11 | 8 | 8 | 122 | 5 | 39 | 17 | 2 | 4 | 67 |
| Not aged = | | | | | | | 78 | | | | | | 33 |
| Total sample: | | | | | | | 200 | | | | | | 100 |
| Mean length | 165.0 | 181.7 | 195.6 | 205.5 | 218.9 | 238.9 | | 156.4 | 185.0 | 197.6 | 208.0 | 215.0 | |

Appendix Table 7 (cont'd)

| Vessel-cruise-tow: | GBR81-3-8 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Len. freq. (mm) | Age | | | | | | | | |
| | II | III | IV | V | VI | VII | VII | IX | Total |
| 132-134 | - | - | - | - | - | - | - | - | - |
| 135-137 | - | - | - | - | - | - | - | - | - |
| 138-140 | - | - | - | - | - | - | - | - | - |
| 141-143 | - | - | - | - | - | - | - | - | - |
| 144-146 | - | - | - | - | - | - | - | - | - |
| 147-149 | - | - | - | - | - | - | - | - | - |
| 150-152 | - | - | - | - | - | - | - | - | - |
| 153-155 | - | - | - | - | - | - | - | - | - |
| 156-158 | - | - | - | - | - | - | - | - | - |
| 159-161 | - | - | - | - | - | - | - | - | - |
| 162-164 | - | - | - | - | - | - | - | - | - |
| 165-167 | - | 1 | - | - | - | - | - | - | 1 |
| 168-170 | - | 0 | - | - | - | - | - | - | 0 |
| 171-173 | 1 | 0 | - | - | - | - | - | - | 1 |
| 174-176 | - | 2 | - | - | - | - | - | - | 2 |
| 177-179 | - | 1 | - | - | - | - | - | - | 1 |
| 180-182 | - | 2 | - | - | - | - | - | - | 2 |
| 183-185 | - | 2 | - | - | - | - | - | - | 2 |
| 186-188 | - | 0 | 1 | - | - | - | - | - | 1 |
| 189-191 | - | 3 | 3 | - | - | - | - | - | 6 |
| 192-194 | - | 4 | 4 | - | - | - | - | - | 8 |
| 195-197 | - | 2 | 1 | 1 | - | - | - | - | 4 |
| 198-200 | - | 0 | 2 | 0 | - | - | - | - | 2 |
| 201-203 | - | 1 | 0 | 0 | - | - | - | - | 1 |
| 204-206 | - | - | 1 | 0 | - | - | - | - | 1 |
| 207-209 | - | - | 1 | 1 | 1 | - | - | - | 3 |
| 210-212 | - | - | 1 | 0 | 0 | - | - | - | 1 |
| 213-215 | - | - | 2 | 2 | 0 | - | - | - | 4 |
| 216-218 | - | - | - | 1 | 0 | - | - | - | 1 |
| 219-221 | - | - | - | 1 | 0 | - | - | - | 1 |
| 222-224 | - | - | - | 0 | 0 | - | - | - | 0 |
| 225-227 | - | - | - | 2 | 1 | - | - | - | 3 |
| 228-230 | - | - | - | 1 | 1 | - | - | - | 2 |
| 231-233 | - | - | - | 0 | 1 | - | - | 1 | 2 |
| 234-236 | - | - | - | 1 | 2 | 1 | 1 | - | 5 |
| 237-239 | - | - | - | - | 1 | 1 | - | - | 2 |
| 240-242 | - | - | - | - | 1 | 0 | - | - | 1 |
| 243-245 | - | - | - | - | 1 | 1 | - | - | 2 |
| 246-248 | - | - | - | - | - | - | - | - | - |
| Total aged | 1 | 18 | 16 | 10 | 9 | 3 | 1 | 1 | 59 |
| Not aged = | | | | | | | | | 41 |
| Total sample: | | | | | | | | | 100 |
| Mean length | 172.0 | 186.7 | 198.4 | 218.5 | 232.0 | 239.0 | 238.0 | 232.0 | |

Appendix Table 7 (cont'd)

| Vessel-cruise-tow: | GBR81-3-9 | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Len. freq. (mm) | Age | | | | | | | |
| | II | III | IV | V | VI | VII | VIII | Total |
| 132-134 | - | - | - | - | - | - | - | - |
| 135-137 | - | - | - | - | - | - | - | - |
| 138-140 | - | - | - | - | - | - | - | - |
| 141-143 | - | - | - | - | - | - | - | - |
| 144-146 | - | - | - | - | - | - | - | - |
| 147-149 | - | - | - | - | - | - | - | - |
| 150-152 | - | - | - | - | - | - | - | - |
| 153-155 | - | - | - | - | - | - | - | - |
| 156-158 | - | 1 | - | - | - | - | - | 1 |
| 159-161 | - | 0 | - | - | - | - | - | 0 |
| 162-164 | - | 0 | - | - | - | - | - | 0 |
| 165-167 | 1 | 0 | - | - | - | - | - | 1 |
| 168-170 | 2 | 0 | - | - | - | - | - | 2 |
| 171-173 | - | 1 | - | - | - | - | - | 1 |
| 174-176 | - | 3 | - | - | - | - | - | 3 |
| 177-179 | - | 0 | - | - | - | - | - | 0 |
| 180-182 | - | 2 | - | - | - | - | - | 2 |
| 183-185 | - | 5 | 2 | - | - | - | - | 7 |
| 186-188 | - | 2 | 0 | - | - | - | - | 2 |
| 189-191 | - | 6 | 2 | - | - | - | - | 8 |
| 192-194 | - | 0 | 4 | - | - | - | - | 4 |
| 195-197 | - | 0 | 6 | - | - | - | - | 6 |
| 198-200 | - | 1 | 4 | - | - | - | - | 5 |
| 201-203 | - | - | 5 | 1 | - | - | - | 6 |
| 204-206 | - | - | 2 | 0 | - | - | - | 2 |
| 207-209 | - | - | 1 | 1 | 1 | - | - | 3 |
| 210-212 | - | - | 2 | 1 | 1 | - | - | 4 |
| 213-215 | - | - | - | 2 | 0 | - | - | 2 |
| 216-218 | - | - | - | 2 | 0 | 1 | - | 3 |
| 219-221 | - | - | - | 3 | 0 | - | - | 3 |
| 222-224 | - | - | - | 3 | 0 | - | - | 3 |
| 225-227 | - | - | - | - | 2 | - | - | 2 |
| 228-230 | - | - | - | - | - | - | - | 0 |
| 231-233 | - | - | - | - | - | - | 1 | 1 |
| 234-236 | - | - | - | - | - | - | - | - |
| 237-239 | - | - | - | - | - | - | - | - |
| 240-242 | - | - | - | - | - | - | - | - |
| 243-245 | - | - | - | - | - | - | - | - |
| 246-248 | - | - | - | - | - | - | - | - |
| Total aged | 3 | 21 | 28 | 13 | 4 | 1 | 1 | 71 |
| Not aged = | | | | | | | | 29 |
| Total sample: | | | | | | | | 100 |
| Mean length | 168.0 | 183.3 | 197.9 | 216.3 | 212.8 | 217.0 | 232.0 | |

Appendix Table 7 (cont'd)

| Vessel-cruise-tow | GBR81-3-10 | | | | | | |
|---|---|---|---|---|---|---|---|
| Len. freq. (mm) | Age | | | | | | |
| | II | III | IV | V | VI | VII | Total |
| 132-134 | - | - | - | - | - | - | - |
| 135-137 | - | - | - | - | - | - | - |
| 138-140 | - | - | - | - | - | - | - |
| 141-143 | - | - | - | - | - | - | - |
| 144-146 | - | - | - | - | - | - | - |
| 147-149 | 1 | - | - | - | - | - | 1 |
| 150-152 | 2 | - | - | - | - | - | 2 |
| 153-155 | 2 | - | - | - | - | - | 2 |
| 156-158 | 1 | - | - | - | - | - | 1 |
| 159-161 | 7 | 1 | - | - | - | - | 8 |
| 162-164 | 4 | 0 | - | - | - | - | 4 |
| 165-167 | 0 | 1 | - | - | - | - | 1 |
| 168-170 | 0 | 1 | - | - | - | - | 1 |
| 171-173 | 0 | 3 | - | - | - | - | 3 |
| 174-176 | 1 | 1 | - | - | - | - | 2 |
| 177-179 | - | 2 | - | - | - | - | 2 |
| 180-182 | - | 5 | 1 | - | - | - | 6 |
| 183-185 | - | 4 | 0 | - | - | - | 4 |
| 186-188 | - | 0 | 1 | - | - | - | 1 |
| 189-191 | - | 6 | 4 | - | - | - | 10 |
| 192-194 | - | 1 | 1 | - | - | - | 2 |
| 195-197 | - | 2 | 0 | - | - | - | 2 |
| 198-200 | - | - | 3 | - | - | - | 3 |
| 201-203 | - | - | 1 | - | - | - | 1 |
| 204-206 | - | - | 3 | 1 | - | - | 4 |
| 207-209 | - | - | 1 | 0 | 1 | - | 2 |
| 210-212 | - | - | 0 | 1 | 0 | - | 1 |
| 213-215 | - | - | 0 | 1 | 1 | - | 2 |
| 216-218 | - | - | 0 | - | 0 | - | 0 |
| 219-221 | - | - | 1 | - | 0 | 1 | 2 |
| 222-224 | - | - | - | - | 1 | 0 | 1 |
| 225-227 | - | - | - | - | 1 | 0 | 1 |
| 228-230 | - | - | - | - | 1 | 2 | 3 |
| 231-233 | - | - | - | - | 0 | 0 | 0 |
| 234-236 | - | - | - | - | 0 | 1 | 1 |
| 237-239 | - | - | - | - | 0 | - | 0 |
| 240-242 | - | - | - | - | 1 | - | 1 |
| 243-245 | - | - | - | - | - | - | - |
| 246-248 | - | - | - | - | - | - | - |
| Total aged | 18 | 27 | 16 | 3 | 6 | 4 | 74 |
| Not aged = | | | | | | | 29 |
| Total sample: | | | | | | | 100 |
| Mean length | 159.0 | 181.8 | 197.7 | 210.0 | 235.5 | 228.2 | |

Appendix Table 7 (cont'd)

| Vessel-cruise-tow | GBR81-3-11 | | | | | |
|---|---|---|---|---|---|---|
| Len. freq. (mm) | Age | | | | | |
| | II | III | IV | V | VI | Total |
| 132-134 | - | - | - | - | - | - |
| 135-137 | - | - | - | - | - | - |
| 138-140 | - | - | - | - | - | - |
| 141-143 | - | - | - | - | - | - |
| 144-146 | - | - | - | - | - | - |
| 147-149 | - | - | - | - | - | - |
| 150-152 | - | - | - | - | - | - |
| 153-155 | 3 | - | - | - | - | 3 |
| 156-158 | 2 | - | - | - | - | 2 |
| 159-161 | 0 | - | - | - | - | 0 |
| 162-164 | 1 | - | - | - | - | 1 |
| 165-167 | 0 | 1 | - | - | - | 1 |
| 168-170 | 2 | 0 | - | - | - | 2 |
| 171-173 | - | 0 | - | - | - | 0 |
| 174-176 | - | 2 | - | - | - | 2 |
| 177-179 | - | 4 | - | - | - | 4 |
| 180-182 | - | 1 | - | - | - | 1 |
| 183-185 | - | 6 | 1 | - | - | 7 |
| 186-188 | - | 1 | 1 | - | - | 2 |
| 189-191 | - | 3 | 0 | - | - | 3 |
| 192-194 | - | 3 | 1 | - | - | 4 |
| 195-197 | - | 4 | 1 | - | - | 5 |
| 198-200 | - | 1 | 2 | - | - | 3 |
| 201-203 | - | 1 | 3 | - | - | 4 |
| 204-206 | - | 0 | 1 | 1 | - | 2 |
| 207-209 | - | 1 | 3 | 1 | - | 5 |
| 210-212 | - | - | 6 | 1 | - | 7 |
| 213-215 | - | - | 2 | 2 | - | 4 |
| 216-218 | - | - | 1 | 1 | 1 | 3 |
| 219-221 | - | - | 2 | 0 | 1 | 3 |
| 222-224 | - | - | - | 1 | 0 | 1 |
| 225-227 | - | - | - | 0 | 1 | 1 |
| 228-230 | - | - | - | 0 | 1 | 1 |
| 231-233 | - | - | - | 1 | 0 | 1 |
| 234-236 | - | - | - | 1 | 2 | 3 |
| 237-239 | - | - | - | - | - | - |
| 240-242 | - | - | - | - | - | - |
| 243-245 | - | - | - | - | - | - |
| 246-248 | - | - | - | - | - | - |
| Total aged | 8 | 28 | 24 | 9 | 6 | 75 |
| Not aged = | | | | | | 25 |
| Total sample: | | | | | | 100 |
| Mean length | 159.1 | 187.2 | 206.0 | 217.7 | 227.0 | |

Appendix Table 7 (cont'd)

| Vessel-cruise-tow | GBR81-3-12 | | | | | |
|---|---|---|---|---|---|---|
| | Age | | | | | |
| Len. freq. (mm) | II | III | IV | V | VI | Total |
| 132-134 | - | - | - | - | - | - |
| 135-137 | - | - | - | - | - | - |
| 138-140 | - | - | - | - | - | - |
| 141-143 | 3 | - | - | - | - | 3 |
| 144-146 | 0 | - | - | - | - | 0 |
| 147-149 | 3 | - | - | - | - | 3 |
| 150-152 | 3 | - | - | - | - | 3 |
| 153-155 | 0 | - | - | - | - | 0 |
| 156-158 | 1 | - | - | - | - | 1 |
| 159-161 | 4 | - | - | - | - | 4 |
| 162-164 | 1 | - | - | - | - | 1 |
| 165-167 | 0 | - | - | - | - | 0 |
| 168-170 | 2 | 0 | - | - | - | 2 |
| 171-173 | - | 2 | - | - | - | 2 |
| 174-176 | - | 0 | - | - | - | 0 |
| 177-179 | - | 3 | 1 | - | - | 4 |
| 180-182 | - | 5 | 0 | - | - | 5 |
| 183-185 | - | 2 | 0 | - | - | 2 |
| 186-188 | - | 2 | 0 | - | - | 2 |
| 189-191 | - | 4 | 0 | - | - | 4 |
| 192-194 | - | 0 | 3 | - | - | 3 |
| 195-197 | - | 1 | 1 | - | - | 2 |
| 198-200 | - | 1 | 1 | - | - | 2 |
| 201-203 | - | - | 2 | - | - | 2 |
| 204-206 | - | - | 1 | - | - | 1 |
| 207-209 | - | - | 0 | - | - | 0 |
| 210-212 | - | - | 1 | 1 | - | 2 |
| 213-215 | - | - | 1 | - | - | 1 |
| 216-218 | - | - | - | - | - | 0 |
| 219-221 | - | - | - | - | 1 | 1 |
| 222-224 | - | - | - | - | - | - |
| 225-227 | - | - | - | - | - | - |
| 228-230 | - | - | - | - | - | - |
| 231-233 | - | - | - | - | - | - |
| 234-236 | - | - | - | - | - | - |
| 237-239 | - | - | - | - | - | - |
| 240-242 | - | - | - | - | - | - |
| 243-245 | - | - | - | - | - | - |
| 246-248 | - | - | - | - | - | - |
| Total aged | 17 | 20 | 11 | 1 | 1 | 50 |
| Not aged = | | | | | | 50 |
| Total sample: | | | | | | 100 |
| Mean length | 154.2 | 183.8 | 198.7 | 211.0 | 220.0 | |

Appendix Table 7 (cont'd)

| Vessel-cruise-tow | GBR81-3-13 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Len. freq. (mm) | Age | | | | | | | | |
| | II | III | IV | V | VI | VII | VIII | IX | Total |
| 132-134 | - | - | - | - | - | - | - | - | - |
| 135-137 | - | - | - | - | - | - | - | - | - |
| 138-140 | - | - | - | - | - | - | - | - | - |
| 141-143 | - | - | - | - | - | - | - | - | - |
| 144-146 | - | - | - | - | - | - | - | - | - |
| 147-149 | - | - | - | - | - | - | - | - | - |
| 150-152 | 1 | - | - | - | - | - | - | - | 1 |
| 153-155 | 0 | - | - | - | - | - | - | - | 0 |
| 156-158 | 0 | - | - | - | - | - | - | - | 0 |
| 159-161 | 0 | - | - | - | - | - | - | - | 0 |
| 162-164 | 0 | 1 | - | - | - | - | - | - | 1 |
| 165-167 | 1 | 0 | - | - | - | - | - | - | 1 |
| 168-170 | - | 0 | - | - | - | - | - | - | 0 |
| 171-173 | - | 4 | - | - | - | - | - | - | 4 |
| 174-176 | - | 0 | - | - | - | - | - | - | 0 |
| 177-179 | - | 1 | - | - | - | - | - | - | 1 |
| 180-182 | - | 3 | - | - | - | - | - | - | 3 |
| 183-185 | - | 1 | 1 | - | - | - | - | - | 2 |
| 186-188 | - | 2 | 0 | - | - | - | - | - | 2 |
| 189-191 | - | 5 | 1 | - | - | - | - | - | 6 |
| 192-194 | - | 3 | 1 | - | - | - | - | - | 4 |
| 195-197 | - | 0 | 6 | - | - | - | - | - | 6 |
| 198-200 | - | 0 | 1 | - | - | - | - | - | 1 |
| 201-203 | - | 1 | 3 | - | - | - | - | - | 4 |
| 204-206 | - | - | 0 | 2 | - | - | - | - | 2 |
| 207-209 | - | - | 1 | 1 | - | - | - | - | 2 |
| 210-212 | - | - | 3 | 0 | - | - | - | - | 3 |
| 213-215 | - | - | 3 | 0 | - | - | - | - | 3 |
| 216-218 | - | - | 0 | 0 | - | - | - | - | 0 |
| 219-221 | - | - | 1 | 3 | 1 | - | - | - | 5 |
| 222-224 | - | - | - | 0 | 1 | - | - | - | 1 |
| 225-227 | - | - | - | 2 | 0 | - | 1 | - | 3 |
| 228-230 | - | - | - | 1 | 0 | - | - | - | 1 |
| 231-233 | - | - | - | 1 | 1 | - | - | - | 2 |
| 234-236 | - | - | - | - | 4 | - | - | - | 4 |
| 237-239 | - | - | - | - | - | - | - | - | 0 |
| 240-242 | - | - | - | - | - | - | - | 1 | 1 |
| 243-245 | - | - | - | - | - | - | - | - | 0 |
| 246-248 | - | - | - | - | - | 1 | - | - | 1 |
| Total aged | 2 | 21 | 21 | 10 | 7 | 1 | 1 | 1 | 64 |
| Not aged = | | | | | | | | | 36 |
| Total sample: | | | | | | | | | 100 |
| Mean length | 158.5 | 183.9 | 202.4 | 219.1 | 230.7 | 247.0 | 226.0 | 241.0 | |

Appendix Table 7 (cont'd)

| Vessel-cruise-tow | GBR81-3-14 | | | | | | |
|---|---|---|---|---|---|---|---|
| | Age | | | | | | |
| Len. freq. (mm) | II | III | IV | V | VI | VII | Total |
| 132-134 | - | - | - | - | - | - | - |
| 135-137 | - | - | - | - | - | - | - |
| 138-140 | - | - | - | - | - | - | - |
| 141-143 | - | - | - | - | - | - | - |
| 144-146 | - | - | - | - | - | - | - |
| 147-149 | - | - | - | - | - | - | - |
| 150-152 | 1 | - | - | - | - | - | 1 |
| 153-155 | 0 | - | - | - | - | - | 0 |
| 156-158 | 0 | - | - | - | - | - | 0 |
| 159-161 | 3 | - | - | - | - | - | 3 |
| 162-164 | 3 | - | - | - | - | - | 3 |
| 165-167 | 2 | - | - | - | - | - | 2 |
| 168-170 | 1 | - | - | - | - | - | 1 |
| 171-173 | 1 | 1 | - | - | - | - | 2 |
| 174-176 | - | 1 | - | - | - | - | 1 |
| 177-179 | - | 1 | - | - | - | - | 1 |
| 180-182 | - | 4 | - | - | - | - | 4 |
| 183-185 | - | 3 | - | - | - | - | 3 |
| 186-188 | - | 3 | - | - | - | - | 3 |
| 189-191 | - | 8 | 4 | - | - | - | 12 |
| 192-194 | - | 1 | 1 | - | - | - | 2 |
| 195-197 | - | - | 2 | - | - | - | 2 |
| 198-200 | - | - | 2 | 2 | 1 | - | 5 |
| 201-203 | - | - | 2 | 2 | 0 | 1 | 5 |
| 204-206 | - | - | 1 | 0 | 0 | - | 1 |
| 207-209 | - | - | 0 | 1 | 1 | - | 2 |
| 210-212 | - | - | 0 | 0 | 0 | - | 0 |
| 213-215 | - | - | 1 | 0 | 0 | - | 1 |
| 216-218 | - | - | 1 | 0 | 0 | - | 1 |
| 219-221 | - | - | - | 1 | 1 | - | 2 |
| 222-224 | - | - | - | 1 | - | - | 1 |
| 225-227 | - | - | - | 0 | - | - | 0 |
| 228-230 | - | - | - | 1 | - | - | 1 |
| 231-233 | - | - | - | - | - | - | - |
| 234-236 | - | - | - | - | - | - | - |
| 237-239 | - | - | - | - | - | - | - |
| 240-242 | - | - | - | - | - | - | - |
| 243-245 | - | - | - | - | - | - | - |
| 246-248 | - | - | - | - | - | - | - |
| Total aged | 11 | 22 | 14 | 8 | 3 | 1 | 59 |
| Not aged = | | | | | | | 41 |
| Total sample: | | | | | | | 100 |
| Mean length | 163.0 | 185.2 | 198.8 | 210.2 | 209.0 | 202.0 | |

Appendix Table 7 (cont'd)

| Vessel-cruise-tow | MW81-1-2 | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Len. freq. (mm) | Age | | | | | | | |
| | II | III | IV | V | VI | VII | VIII | Total |
| 132-134 | - | - | - | - | - | - | - | - |
| 135-137 | - | - | - | - | - | - | - | - |
| 138-140 | - | - | - | - | - | - | - | - |
| 141-143 | - | - | - | - | - | - | - | - |
| 144-146 | - | - | - | - | - | - | - | - |
| 147-149 | - | - | - | - | - | - | - | - |
| 150-152 | - | - | - | - | - | - | - | - |
| 153-155 | - | - | - | - | - | - | - | - |
| 156-158 | - | - | - | - | - | - | - | - |
| 159-161 | - | - | - | - | - | - | - | - |
| 162-164 | - | - | - | - | - | - | - | - |
| 165-167 | - | - | - | - | - | - | - | - |
| 168-170 | - | 1 | - | - | - | - | - | 1 |
| 171-173 | - | 0 | - | - | - | - | - | 0 |
| 174-176 | - | 0 | - | - | - | - | - | 0 |
| 177-179 | - | 0 | - | - | - | - | - | 0 |
| 180-182 | - | 2 | - | - | - | - | - | 2 |
| 183-185 | - | 3 | - | - | - | - | - | 3 |
| 186-188 | - | 1 | - | - | - | - | - | 1 |
| 189-191 | - | 2 | - | 1 | 1 | - | - | 4 |
| 192-194 | - | 1 | 1 | 0 | 0 | - | - | 2 |
| 195-197 | - | 1 | 0 | 0 | 1 | - | - | 2 |
| 198-200 | - | - | 0 | 0 | 0 | - | - | 0 |
| 201-203 | - | - | 0 | 1 | 0 | - | - | 1 |
| 204-206 | - | - | 0 | 1 | 0 | - | - | 1 |
| 207-209 | - | - | 1 | 0 | 0 | - | - | 1 |
| 210-212 | - | - | 1 | 1 | 0 | - | - | 2 |
| 213-215 | - | - | 0 | 0 | 0 | - | 1 | 1 |
| 216-218 | - | - | 1 | 2 | 1 | - | - | 4 |
| 219-221 | - | - | - | 1 | - | - | - | 1 |
| 222-224 | - | - | - | 1 | - | - | - | 1 |
| 225-227 | - | - | - | - | - | - | - | - |
| 228-230 | - | - | - | - | - | - | - | - |
| 231-233 | - | - | - | - | - | - | - | - |
| 234-236 | - | - | - | - | - | - | - | - |
| 237-239 | - | - | - | - | - | - | - | - |
| 240-242 | - | - | - | - | - | - | - | - |
| 243-245 | - | - | - | - | - | - | - | - |
| 246-248 | - | - | - | - | - | - | - | - |
| Total aged | 0 | 11 | 4 | 8 | 3 | 0 | 1 | 27 |
| Not aged = | | | | | | | | 11 |
| Total sample: | | | | | | | | 38 |
| Mean length | - | 185.4 | 202.5 | 210.6 | 201.0 | - | 214.0 | |

Appendix Table 7 (cont'd)

| Vessel-cruise-tow | MW81-1-3 | | | | | |
|---|---|---|---|---|---|---|
| | Age | | | | | |
| Len. freq. (mm) | II | III | IV | V | VI | Total |
| 132-134 | - | - | - | - | - | - |
| 135-137 | - | - | - | - | - | - |
| 138-140 | - | - | - | - | - | - |
| 141-143 | 1 | - | - | - | - | 1 |
| 144-146 | 0 | - | - | - | - | 0 |
| 147-149 | 1 | - | - | - | - | 1 |
| 150-152 | - | - | - | - | - | 0 |
| 153-155 | - | - | - | - | - | 0 |
| 156-158 | - | - | - | - | - | 0 |
| 159-161 | - | - | - | - | - | 0 |
| 162-164 | - | - | - | - | - | 0 |
| 165-167 | - | - | - | - | - | 0 |
| 168-170 | - | - | - | - | - | 0 |
| 171-173 | - | - | - | - | - | 0 |
| 174-176 | - | - | - | - | - | 0 |
| 177-179 | - | - | - | - | - | 0 |
| 180-182 | - | 4 | - | - | - | 4 |
| 183-185 | - | 0 | - | - | - | 0 |
| 186-188 | - | 1 | - | - | - | 1 |
| 189-191 | - | 3 | 1 | - | - | 4 |
| 192-194 | - | - | 1 | - | - | 1 |
| 195-197 | - | - | 2 | 1 | - | 3 |
| 198-200 | - | - | 1 | 0 | - | 1 |
| 201-203 | - | - | 1 | 0 | - | 1 |
| 204-206 | - | - | 1 | 0 | - | 1 |
| 207-209 | - | - | 1 | 0 | 1 | 2 |
| 210-212 | - | - | - | 0 | 0 | 0 |
| 213-215 | - | - | - | 0 | 0 | 0 |
| 216-218 | - | - | - | 0 | 0 | 0 |
| 219-221 | - | - | - | 1 | 0 | 1 |
| 222-224 | - | - | - | - | 0 | 0 |
| 225-227 | - | - | - | - | 2 | 2 |
| 228-230 | - | - | - | - | - | - |
| 231-233 | - | - | - | - | - | - |
| 234-236 | - | - | - | - | - | - |
| 237-239 | - | - | - | - | - | - |
| 240-242 | - | - | - | - | - | - |
| 243-245 | - | - | - | - | - | - |
| 246-248 | - | - | - | - | - | - |
| Total aged | 2 | 8 | 8 | 2 | 3 | 23 |
| Not aged = | | | | | | 2 |
| Total sample: | | | | | | 25 |
| Mean length | 145.0 | 185.1 | 198.6 | 208.0 | 220.0 | |

Appendix Table 7 (cont'd)

| Vessel-cruise-tow | MW81-1-14 | | | | | MW81-1-15 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Len. freq. (mm) | Age | | | | | Age | | | | | | | |
| | II | III | IV | V | Total | II | III | IV | V | VI | VII | VIII | Total |
| 132-134 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 135-137 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 138-140 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 141-143 | - | - | - | - | - | 2 | - | - | - | - | - | - | 2 |
| 144-146 | 1 | - | - | - | 1 | 1 | - | - | - | - | - | - | 1 |
| 147-149 | 2 | - | - | - | 2 | 4 | - | - | - | - | - | - | 4 |
| 150-152 | 3 | - | - | - | 3 | 5 | - | - | - | - | - | - | 5 |
| 153-155 | 1 | - | - | - | 1 | 6 | - | - | - | - | - | - | 6 |
| 156-158 | 1 | - | - | - | 1 | 5 | - | - | - | - | - | - | 5 |
| 159-161 | 3 | 1 | - | - | 4 | 9 | - | - | - | - | - | - | 9 |
| 162-164 | 1 | 1 | - | - | 2 | 6 | - | - | - | - | - | - | 6 |
| 165-167 | - | 0 | - | - | 0 | 2 | - | - | - | - | - | - | 2 |
| 168-170 | - | 0 | - | - | 0 | 2 | - | - | - | - | - | - | 2 |
| 171-173 | - | 0 | - | - | 0 | 1 | 3 | - | - | - | - | - | 4 |
| 174-176 | - | 1 | 1 | - | 2 | - | 0 | - | - | - | - | - | 0 |
| 177-179 | - | 1 | 0 | - | 1 | - | 0 | - | - | - | - | - | 0 |
| 180-182 | - | 0 | 0 | - | 0 | - | 1 | - | - | - | - | - | 1 |
| 183-185 | - | 0 | 0 | - | 0 | - | 1 | - | - | - | - | - | 1 |
| 186-188 | - | 2 | 0 | - | 2 | - | - | - | - | - | - | - | 0 |
| 189-191 | - | - | 0 | - | 0 | - | - | 2 | - | - | - | - | 2 |
| 192-194 | - | - | 0 | - | 0 | - | - | - | - | - | - | - | 0 |
| 195-197 | - | - | 0 | - | 0 | - | - | - | - | - | - | - | 0 |
| 198-200 | - | - | 0 | - | 0 | - | - | - | - | - | - | - | 0 |
| 201-203 | - | - | 1 | - | 1 | - | - | - | - | - | - | - | 0 |
| 204-206 | - | - | 0 | - | 0 | - | - | - | - | - | - | - | 0 |
| 207-209 | - | - | 0 | - | 0 | - | - | - | - | - | - | - | 0 |
| 210-212 | - | - | 0 | - | 0 | - | - | - | - | - | - | - | 0 |
| 213-215 | - | - | 0 | - | 0 | - | - | - | - | - | - | - | 0 |
| 216-218 | - | - | 1 | - | 1 | - | - | - | - | - | - | - | 0 |
| 219-221 | - | - | - | - | 0 | - | - | - | 1 | - | - | - | 1 |
| 222-224 | - | - | - | - | 0 | - | - | - | 0 | - | - | - | 0 |
| 225-227 | - | - | - | - | 0 | - | - | - | 1 | - | - | - | 1 |
| 228-230 | - | - | - | 1 | 1 | - | - | - | - | - | - | - | 0 |
| 231-233 | - | - | - | - | - | - | - | - | - | - | 1 | - | 1 |
| 234-236 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 237-239 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 240-242 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 243-245 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 246-248 | - | - | - | - | - | - | - | - | - | - | - | 1 | - |
| Total aged | 12 | 6 | 3 | 1 | 22 | 43 | 5 | 2 | 2 | 0 | 1 | 1 | 54 |
| Not aged = | | | | | 1 | | | | | | | | 21 |
| Total sample: | | | | | 23 | | | | | | | | 75 |
| Mean length | 154.0 | 175.0 | 195.0 | 229.0 | | 156.9 | 176.2 | 190.0 | 223.0 | - | 230.0 | 250.0 | |

Appendix Table 7 (cont'd)

| Vessel-cruise-tow | MW81-1-16 | | | | MW81-1-17 | | | |
|---|---|---|---|---|---|---|---|---|
| Len. freq. (mm) | Age II | Age III | Age IV | Total | Age II | Age III | Age IV | Total |
| 132-134 | 3 | - | - | 3 | - | - | - | - |
| 135-137 | 2 | - | - | 2 | - | - | - | - |
| 138-140 | 3 | - | - | 3 | 1 | - | - | 1 |
| 141-143 | 9 | 1 | - | 10 | 2 | - | - | 2 |
| 144-146 | 6 | 1 | - | 7 | 3 | - | - | 3 |
| 147-149 | 6 | 1 | - | 7 | 3 | - | - | 3 |
| 150-152 | 8 | 1 | - | 9 | 4 | 1 | - | 5 |
| 153-155 | 5 | 1 | - | 6 | 0 | 0 | - | 0 |
| 156-158 | 4 | 1 | - | 5 | 2 | 0 | - | 2 |
| 159-161 | 2 | 0 | - | 2 | 1 | 0 | - | 1 |
| 162-164 | 1 | 0 | - | 1 | - | 0 | - | 0 |
| 165-167 | - | 0 | - | 0 | - | 0 | - | 0 |
| 168-170 | - | 1 | - | 1 | - | 0 | - | 0 |
| 171-173 | - | - | - | 0 | - | 0 | - | 0 |
| 174-176 | - | - | - | 0 | - | 1 | - | 1 |
| 177-179 | - | - | - | 0 | - | 1 | - | 1 |
| 180-182 | - | - | - | 0 | - | 0 | - | 0 |
| 183-185 | - | - | - | 0 | - | 1 | 1 | 2 |
| 186-188 | - | - | - | 0 | - | 0 | 0 | 0 |
| 189-191 | - | - | - | 0 | - | 0 | 0 | 0 |
| 192-194 | - | - | - | 0 | - | 1 | 0 | 1 |
| 195-197 | - | - | - | 0 | - | - | 1 | 1 |
| 198-200 | - | - | - | 0 | - | - | - | - |
| 201-203 | - | - | 1 | 1 | - | - | - | - |
| 204-206 | - | - | - | - | - | - | - | - |
| 207-209 | - | - | - | - | - | - | - | - |
| 210-212 | - | - | - | - | - | - | - | - |
| 213-215 | - | - | - | - | - | - | - | - |
| 216-218 | - | - | - | - | - | - | - | - |
| 219-221 | - | - | - | - | - | - | - | - |
| 222-224 | - | - | - | - | - | - | - | - |
| 225-227 | - | - | - | - | - | - | - | - |
| 228-230 | - | - | - | - | - | - | - | - |
| 231-233 | - | - | - | - | - | - | - | - |
| 234-236 | - | - | - | - | - | - | - | - |
| 237-239 | - | - | - | - | - | - | - | - |
| 240-242 | - | - | - | - | - | - | - | - |
| 243-245 | - | - | - | - | - | - | - | - |
| 246-248 | - | - | - | - | - | - | - | - |
| Total aged | 49 | 7 | 1 | 57 | 16 | 5 | 2 | 23 |
| Not aged = | | | | 43 | | | | 40 |
| Total sample: | | | | 100 | | | | 63 |
| Mean length | 147.2 | 152.3 | 202.0 | | 148.8 | 176.2 | 190.0 | |

Appendix Table 7 (cont'd)

| Vessel-cruise-tow | MW81-1-18 | | | | | | |
|---|---|---|---|---|---|---|---|
| Len. freq. (mm) | Age | | | | | | |
| | II | III | IV | V | VI | VII | Total |
| 132-134 | - | - | - | - | - | - | - |
| 135-137 | - | - | - | - | - | - | - |
| 138-140 | - | - | - | - | - | - | - |
| 141-143 | - | - | - | - | - | - | - |
| 144-146 | - | - | - | - | - | - | - |
| 147-149 | - | - | - | - | - | - | - |
| 150-152 | - | - | - | - | - | - | - |
| 153-155 | - | - | - | - | - | - | - |
| 156-158 | - | - | - | - | - | - | - |
| 159-161 | - | - | - | - | - | - | - |
| 162-164 | 1 | - | - | - | - | - | 1 |
| 165-167 | 1 | - | - | - | - | - | 1 |
| 168-170 | - | - | - | - | - | - | 0 |
| 171-173 | - | - | - | - | - | - | 0 |
| 174-176 | - | 1 | - | - | - | - | 1 |
| 177-179 | - | 0 | - | - | - | - | 0 |
| 180-182 | - | 1 | - | - | - | - | 1 |
| 183-185 | - | 4 | - | - | - | - | 4 |
| 186-188 | - | 0 | - | - | - | - | 0 |
| 189-191 | - | 2 | 1 | - | - | - | 3 |
| 192-194 | - | 2 | 2 | - | - | - | 4 |
| 195-197 | - | 0 | 0 | - | - | - | 0 |
| 198-200 | - | 1 | 2 | - | - | - | 3 |
| 201-203 | - | 0 | 2 | 1 | - | - | 3 |
| 204-206 | - | 1 | 4 | 0 | - | - | 5 |
| 207-209 | - | - | 1 | 0 | - | - | 1 |
| 210-212 | - | - | 3 | 0 | - | - | 3 |
| 213-215 | - | - | - | 0 | - | - | 0 |
| 216-218 | - | - | - | 2 | - | 1 | 3 |
| 219-221 | - | - | - | 1 | - | 1 | 2 |
| 222-224 | - | - | - | 1 | 1 | - | 2 |
| 225-227 | - | - | - | 1 | 1 | - | 2 |
| 228-230 | - | - | - | 1 | 0 | - | 1 |
| 231-233 | - | - | - | - | 1 | - | 1 |
| 234-236 | - | - | - | - | - | - | - |
| 237-239 | - | - | - | - | - | - | - |
| 240-242 | - | - | - | - | - | - | - |
| 243-245 | - | - | - | - | - | - | - |
| 246-248 | - | - | - | - | - | - | - |
| Total aged | 2 | 12 | 15 | 7 | 3 | 2 | 41 |
| Not aged = | | | | | | | 59 |
| Total sample: | | | | | | | 100 |
| Mean length | 164.5 | 188.5 | 202.6 | 216.3 | 220.0 | 221.5 | |

Appendix Table 7 (cont'd)

| Vessel-cruise-tow | MW81-1-20 | | | | | | |
|---|---|---|---|---|---|---|---|
| Len. freq. (mm) | Age | | | | | | |
| | II | III | IV | V | VI | VII | Total |
| 132-134 | - | - | - | - | - | - | - |
| 135-137 | - | - | - | - | - | - | - |
| 138-140 | - | - | - | - | - | - | - |
| 141-143 | - | - | - | - | - | - | - |
| 144-146 | - | - | - | - | - | - | - |
| 147-149 | - | - | - | - | - | - | - |
| 150-152 | - | - | - | - | - | - | - |
| 153-155 | - | - | - | - | - | - | - |
| 156-158 | - | - | - | - | - | - | - |
| 159-161 | - | - | - | - | - | - | - |
| 162-164 | 1 | - | - | - | - | - | 1 |
| 165-167 | - | 1 | - | - | - | - | 1 |
| 168-170 | - | 1 | - | - | - | - | 1 |
| 171-173 | - | 0 | - | - | - | - | 0 |
| 174-176 | - | 3 | - | - | - | - | 3 |
| 177-179 | - | 0 | - | - | - | - | 0 |
| 180-182 | - | 6 | - | - | - | - | 6 |
| 183-185 | - | 4 | 2 | - | - | - | 6 |
| 186-188 | - | 1 | 1 | - | - | - | 2 |
| 189-191 | - | 6 | 1 | - | - | - | 7 |
| 192-194 | - | 3 | 2 | - | - | - | 5 |
| 195-197 | - | 4 | 3 | - | - | - | 7 |
| 198-200 | - | 3 | 1 | 2 | - | - | 6 |
| 201-203 | - | - | 4 | 0 | - | - | 4 |
| 204-206 | - | - | 1 | 0 | - | - | 1 |
| 207-209 | - | - | 4 | 1 | - | - | 5 |
| 210-212 | - | - | 1 | 0 | - | - | 1 |
| 213-215 | - | - | 0 | 4 | - | - | 4 |
| 216-218 | - | - | 2 | 2 | - | - | 4 |
| 219-221 | - | - | - | 2 | - | - | 2 |
| 222-224 | - | - | - | - | - | 1 | 1 |
| 225-227 | - | - | - | - | 2 | - | 2 |
| 228-230 | - | - | - | - | - | - | - |
| 231-233 | - | - | - | - | - | - | - |
| 234-236 | - | - | - | - | - | - | - |
| 237-239 | - | - | - | - | - | - | - |
| 240-242 | - | - | - | - | - | - | - |
| 243-245 | - | - | - | - | - | - | - |
| 246-248 | - | - | - | - | - | - | - |
| Total aged | 1 | 32 | 22 | 11 | 2 | 1 | 69 |
| Not aged = | | | | | | | 31 |
| Total sample: | | | | | | | 100 |
| Mean length | 163.0 | 186.5 | 210.4 | 212.4 | 226.0 | 223.0 | |

Appendix Table 7 (cont'd)

| Vessel-cruise-tow | MW81-1-27 | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Len. freq. (mm) | Age | | | | | | | |
| | II | III | IV | V | VI | VII | VIII | Total |
| 132-134 | - | - | - | - | - | - | - | - |
| 135-137 | - | - | - | - | - | - | - | - |
| 138-140 | - | - | - | - | - | - | - | - |
| 141-143 | - | - | - | - | - | - | - | - |
| 144-146 | - | - | - | - | - | - | - | - |
| 147-149 | - | - | - | - | - | - | - | - |
| 150-152 | - | - | - | - | - | - | - | - |
| 153-155 | - | - | - | - | - | - | - | - |
| 156-158 | - | - | - | - | - | - | - | - |
| 159-161 | 1 | - | - | - | - | - | - | 1 |
| 162-164 | - | - | - | - | - | - | - | 0 |
| 165-167 | - | - | - | - | - | - | - | 0 |
| 168-170 | - | - | - | - | - | - | - | 0 |
| 171-173 | - | - | - | - | - | - | - | 0 |
| 174-176 | - | - | - | - | - | - | - | 0 |
| 177-179 | - | - | - | - | - | - | - | 0 |
| 180-182 | - | - | - | - | - | - | - | 0 |
| 183-185 | - | - | - | - | - | - | - | 0 |
| 186-188 | - | - | - | - | - | - | - | 0 |
| 189-191 | - | - | - | - | - | - | - | 0 |
| 192-194 | - | 1 | - | - | - | - | - | 1 |
| 195-197 | - | - | - | - | - | - | - | 0 |
| 198-200 | - | - | - | - | - | - | - | 0 |
| 201-203 | - | - | - | - | - | - | - | 0 |
| 204-206 | - | - | - | - | - | - | - | 0 |
| 207-209 | - | - | 1 | - | - | - | - | 1 |
| 210-212 | - | - | - | - | 2 | - | - | 2 |
| 213-215 | - | - | - | - | 1 | - | - | 1 |
| 216-218 | - | - | - | - | 0 | - | 1 | 1 |
| 219-221 | - | - | - | 1 | 0 | - | - | 1 |
| 222-224 | - | - | - | - | 1 | - | - | 1 |
| 225-227 | - | - | - | - | - | - | - | - |
| 228-230 | - | - | - | - | - | - | - | - |
| 231-233 | - | - | - | - | - | - | - | - |
| 234-236 | - | - | - | - | - | - | - | - |
| 237-239 | - | - | - | - | - | - | - | - |
| 240-242 | - | - | - | - | - | - | - | - |
| 243-245 | - | - | - | - | - | - | - | - |
| 246-248 | - | - | - | - | - | - | - | - |
| Total aged | 1 | 1 | 1 | 1 | 4 | 0 | 1 | 9 |
| Not aged = | | | | | | | | 3 |
| Total sample: | | | | | | | | 12 |
| Mean length | 160.0 | 193.0 | 208.0 | 220.0 | 214.8 | - | 214.0 | |

Appendix Table 7 (cont'd)

| Vessel-cruise-tow | HB81-1-9 | | | | | | HB81-1-10 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Len. freq. (mm) | Age | | | | | | Age | | | | | | |
| | II | III | IV | V | VI | Total | II | III | IV | V | VI | IX | Total |
| 132-134 | - | - | - | - | - | - | 2 | - | - | - | - | - | 2 |
| 135-137 | - | - | - | - | - | - | 1 | - | - | - | - | - | 1 |
| 138-140 | - | - | - | - | - | - | 2 | - | - | - | - | - | 2 |
| 141-143 | - | - | - | - | - | - | 0 | - | - | - | - | - | 0 |
| 144-146 | - | - | - | - | - | - | 2 | - | - | - | - | - | 2 |
| 147-149 | - | - | - | - | - | - | 4 | - | - | - | - | - | 4 |
| 150-152 | 1 | 1 | - | - | - | 2 | 5 | - | - | - | - | - | 5 |
| 153-155 | 1 | 0 | - | - | - | 1 | 1 | - | - | - | - | - | 1 |
| 156-158 | 1 | 0 | - | - | - | 1 | 5 | - | - | - | - | - | 5 |
| 159-161 | 1 | 2 | - | - | - | 3 | 2 | - | - | - | - | - | 2 |
| 162-164 | 3 | 1 | - | - | - | 4 | 2 | 1 | - | - | - | - | 3 |
| 165-167 | 0 | 0 | - | - | - | 0 | 4 | 0 | - | - | - | - | 4 |
| 168-170 | 0 | 2 | - | - | - | 2 | 1 | 1 | - | - | - | - | 2 |
| 171-173 | 1 | 5 | - | - | - | 6 | - | 3 | 1 | - | - | - | 4 |
| 174-176 | - | 6 | - | - | - | 6 | - | 2 | 0 | - | - | - | 2 |
| 177-179 | - | 9 | - | - | - | 9 | - | 1 | 1 | - | - | - | 2 |
| 180-182 | - | 8 | - | - | - | 8 | - | 4 | 0 | - | - | - | 4 |
| 183-185 | - | 4 | 1 | - | - | 5 | - | 1 | 0 | - | - | - | 1 |
| 186-188 | - | 3 | 1 | - | - | 4 | - | 4 | 0 | - | - | - | 4 |
| 189-191 | - | 6 | 2 | - | - | 8 | - | 1 | 0 | - | - | - | 1 |
| 192-194 | - | 0 | 2 | - | - | 2 | - | 1 | 2 | - | - | - | 3 |
| 195-197 | - | 3 | 2 | - | - | 5 | - | 1 | 0 | - | - | - | 1 |
| 198-200 | - | - | 2 | - | - | 2 | - | 1 | 1 | - | - | - | 2 |
| 201-203 | - | - | 0 | 1 | - | 1 | - | - | 0 | - | - | - | 0 |
| 204-206 | - | - | 1 | 0 | - | 1 | - | - | 0 | - | - | - | 0 |
| 207-209 | - | - | - | 0 | 1 | 1 | - | - | 1 | - | - | - | 1 |
| 210-212 | - | - | - | 0 | 0 | 0 | - | - | - | - | - | - | 0 |
| 213-215 | - | - | - | 1 | 0 | 1 | - | - | - | 1 | - | - | 1 |
| 216-218 | - | - | - | - | 0 | 0 | - | - | - | 0 | - | - | 0 |
| 219-221 | - | - | - | - | 0 | 0 | - | - | - | 0 | - | - | 0 |
| 222-224 | - | - | - | - | 0 | 0 | - | - | - | 0 | - | - | 0 |
| 225-227 | - | - | - | - | 1 | 1 | - | - | - | 1 | 2 | - | 3 |
| 228-230 | - | - | - | - | 1 | 1 | - | - | - | - | 1 | - | 1 |
| 231-233 | - | - | - | - | - | - | - | - | - | - | - | 1 | 1 |
| 234-236 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 237-239 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 240-242 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 243-245 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 246-248 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Total aged | 8 | 50 | 11 | 2 | 3 | 74 | 31 | 21 | 6 | 2 | 3 | 1 | 64 |
| Not aged = | | | | | | 26 | | | | | | | 26 |
| Total sample: | | | | | | 100 | | | | | | | 90 |
| Mean length | 160.4 | 179.1 | 193.8 | 205.0 | 221.0 | | 152.7 | 181.4 | 190.5 | 220.0 | 227.0 | 230.0 | |

Appendix Table 7 (cont'd)

| Vessel-cruise-tow | HB81-1-12 | | | | | | HB81-1-15 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Len. freq. (mm) | Age | | | | | | Age | | | | | | |
| | II | III | IV | VII | IX | Total | II | III | IV | V | VI | VII | Total |
| 132-134 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 135-137 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 138-140 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 141-143 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 144-146 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 147-149 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 150-152 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 153-155 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 156-158 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 159-161 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 162-164 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 165-167 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 168-170 | - | - | - | - | - | - | 2 | - | - | - | - | - | 2 |
| 171-173 | - | - | - | - | - | - | - | - | - | - | - | - | 0 |
| 174-176 | - | 1 | - | - | - | 1 | - | 1 | - | - | - | - | 1 |
| 177-179 | - | 0 | - | - | - | 0 | - | 2 | - | - | - | - | 2 |
| 180-182 | - | 0 | - | - | - | 0 | - | 2 | - | - | - | - | 2 |
| 183-185 | - | 1 | - | - | - | 1 | - | 1 | - | - | - | - | 1 |
| 186-188 | - | 0 | - | - | - | 0 | - | 4 | - | - | - | - | 4 |
| 189-191 | - | 2 | 1 | - | - | 3 | - | 3 | - | - | - | - | 3 |
| 192-194 | - | 0 | 0 | - | - | 0 | - | 3 | 3 | - | - | - | 6 |
| 195-197 | - | 1 | 1 | - | - | 2 | - | 5 | 1 | 1 | - | - | 7 |
| 198-200 | - | - | 0 | - | - | 0 | - | 2 | 1 | 0 | - | - | 3 |
| 201-203 | - | - | 0 | - | - | 0 | - | 2 | 0 | 0 | 1 | - | 3 |
| 204-206 | - | - | 0 | - | - | 0 | - | 2 | 0 | 0 | - | - | 2 |
| 207-209 | - | - | 0 | - | - | 0 | - | 1 | 2 | 0 | - | - | 3 |
| 210-212 | - | - | 1 | - | - | 1 | - | - | 2 | 0 | - | - | 2 |
| 213-215 | - | - | - | - | 1 | 1 | - | - | 0 | 0 | - | - | 0 |
| 216-218 | - | - | - | - | - | 0 | - | - | 0 | 0 | - | 1 | 1 |
| 219-221 | - | - | - | - | - | 0 | - | - | 0 | 1 | - | - | 1 |
| 222-224 | - | - | - | - | - | 0 | - | - | 0 | 1 | - | - | 1 |
| 225-227 | - | - | - | 1 | - | 1 | - | - | 1 | - | - | - | 1 |
| 228-230 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 231-233 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 234-236 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 237-239 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 240-242 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 243-245 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 246-248 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Total aged | 0 | 5 | 3 | 1 | 1 | 10 | 2 | 28 | 10 | 3 | 1 | 1 | 45 |
| Not aged = | | | | | | 7 | | | | | | | 55 |
| Total sample: | | | | | | 17 | | | | | | | 100 |
| Mean length | | | | | | | 169.0 | 191.9 | 203.8 | 213.0 | 202.0 | 217.0 | |

Appendix Table 7 (cont'd)

| Vessel-cruise-tow | HBBI-1-16 | | | | | Total length-at-age composition | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Age | | | | | Age | | | | | | | | |
| Len. freq. (mm) | II | III | IV | V | Total | II | III | IV | V | VI | VII | VIII | IX | Total |
| 132-134 | - | - | - | - | - | 5 | - | - | - | - | - | - | - | 5 |
| 135-137 | - | - | - | - | - | 3 | - | - | - | - | - | - | - | 3 |
| 138-140 | - | - | - | - | - | 6 | - | - | - | - | - | - | - | 6 |
| 141-143 | - | - | - | - | - | 19 | 1 | - | - | - | - | - | - | 20 |
| 144-146 | - | - | - | - | - | 20 | 1 | - | - | - | - | - | - | 21 |
| 147-149 | - | - | - | - | - | 32 | 1 | - | - | - | - | - | - | 33 |
| 150-152 | 1 | - | - | - | 1 | 48 | 3 | - | - | - | - | - | - | 51 |
| 153-155 | 0 | - | - | - | 0 | 27 | 4 | - | - | - | - | - | - | 31 |
| 156-158 | 1 | - | - | - | 1 | 32 | 3 | - | - | - | - | - | - | 35 |
| 159-161 | 1 | - | - | - | 1 | 41 | 7 | - | - | - | - | - | - | 48 |
| 162-164 | 0 | - | - | - | 0 | 31 | 6 | - | - | - | - | - | - | 37 |
| 165-167 | 1 | - | - | - | 1 | 16 | 10 | - | - | - | - | - | - | 26 |
| 168-170 | 0 | - | - | - | 0 | 14 | 13 | - | - | - | - | - | - | 27 |
| 171-173 | 0 | - | - | - | 0 | 5 | 37 | 1 | - | - | - | - | - | 43 |
| 174-176 | 0 | 2 | - | - | 2 | 1 | 43 | 1 | - | - | - | - | - | 45 |
| 177-179 | 1 | 2 | - | - | 3 | 1 | 52 | 3 | - | - | - | - | - | 56 |
| 180-182 | - | 1 | - | - | 1 | - | 66 | 4 | - | - | - | - | - | 70 |
| 183-185 | - | 1 | - | - | 1 | - | 65 | 11 | - | - | - | - | - | 76 |
| 186-188 | - | 2 | - | - | 2 | - | 45 | 7 | 2 | - | - | - | - | 54 |
| 189-191 | - | 1 | - | - | 1 | - | 76 | 30 | 1 | 1 | - | - | - | 108 |
| 192-194 | - | 4 | - | - | 4 | - | 38 | 39 | 0 | 0 | - | - | - | 77 |
| 195-197 | - | 2 | 1 | - | 3 | - | 31 | 37 | 4 | 1 | - | - | - | 73 |
| 198-200 | - | 0 | 1 | - | 1 | - | 12 | 35 | 4 | 1 | - | - | - | 52 |
| 201-203 | - | 1 | 0 | - | 1 | - | 5 | 29 | 7 | 2 | 1 | - | - | 44 |
| 204-206 | - | - | 0 | - | 0 | - | 3 | 21 | 9 | 2 | 1 | - | - | 36 |
| 207-209 | - | - | 1 | - | 1 | - | 2 | 23 | 6 | 6 | 0 | - | - | 37 |
| 210-212 | - | - | 0 | - | 0 | - | - | 22 | 6 | 4 | 1 | - | - | 33 |
| 213-215 | - | - | 1 | - | 1 | - | - | 10 | 14 | 5 | 0 | 2 | 1 | 32 |
| 216-218 | - | - | 0 | - | 0 | - | - | 6 | 11 | 3 | 3 | 0 | 0 | 23 |
| 219-221 | - | - | 1 | - | 1 | - | - | 5 | 17 | 4 | 2 | 0 | 0 | 28 |
| 222-224 | - | - | - | - | 0 | - | - | 0 | 9 | 5 | 1 | 0 | 0 | 15 |
| 225-227 | - | - | - | - | 0 | - | - | 1 | 7 | 14 | 2 | 1 | 0 | 25 |
| 228-230 | - | - | - | - | 0 | - | - | - | 5 | 7 | 3 | 0 | 0 | 15 |
| 231-233 | - | - | - | - | 0 | - | - | - | 2 | 2 | 2 | 1 | 2 | 9 |
| 234-236 | - | - | - | 1 | 1 | - | - | - | 2 | 11 | 4 | 1 | 0 | 18 |
| 237-239 | - | - | - | - | - | - | - | - | - | 1 | 1 | 0 | 0 | 2 |
| 240-242 | - | - | - | - | - | - | - | - | - | 2 | 1 | 0 | 1 | 4 |
| 243-245 | - | - | - | - | - | - | - | - | - | 1 | 1 | 0 | - | 2 |
| 246-248 | - | - | - | - | - | - | - | - | - | - | 3 | 1 | - | 4 |
| Total aged | 5 | 16 | 5 | 1 | 27 | 301 | 524 | 285 | 106 | 72 | 26 | 6 | 4 | 1,324 |
| Not aged = | | | | | 53 | | | | | | | | | 999 |
| Total sample: | | | | | 80 | | | | | | | | | 2,323 |
| Mean length | 162.4 | 187.6 | 207.4 | 235.0 | | | | | | | | | | |

Appendix Table 8. Percentage of herring of each age group that matured in offshore samples, by sample, March 9-27, 1981, southwest coast Vancouver Island.

| Age: | 2 | | | 3 | | | 4 | | | 5 and older | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Percent | | Total | Percent | | Total | Percent | | Total | Percent | | Total |
| Maturity[a]: | 1-2 | 3-8 | no. | 1-2 | 3-8 | no. | 1-2 | 3-8 | no. | 1-2 | 3-8 | no. |
| Vessel-tow no. | | | | | | | | | | | | |
| GBR81-3-1 | 70 | 30 | 29 | - | 100 | 26 | - | 100 | 9 | - | 100 | 0 |
| 3 | 15 | 85 | 32 | - | 100 | 30 | - | 100 | 9 | - | 100 | 3 |
| 6 | - | 100 | 3 | 2 | 98 | 65 | 9 | 91 | 27 | - | 100 | 27 |
| 7 | 40 | 60 | 5 | - | 100 | 39 | - | 100 | 17 | - | 100 | 6 |
| 8 | 100 | - | 1 | - | 100 | 18 | - | 100 | 16 | - | 100 | 24 |
| 9 | - | 100 | 3 | - | 100 | 21 | - | 100 | 28 | - | 100 | 19 |
| 10 | 39 | 61 | 18 | 4 | 96 | 27 | - | 100 | 16 | - | 100 | 13 |
| 11 | 75 | 25 | 8 | - | 100 | 28 | - | 100 | 24 | - | 100 | 15 |
| 12 | 35 | 65 | 17 | - | 100 | 20 | - | 100 | 11 | - | 100 | 2 |
| 13 | - | 100 | 2 | - | 100 | 21 | - | 100 | 21 | - | 100 | 20 |
| 14 | 18 | 82 | 11 | - | 100 | 22 | - | 100 | 14 | - | 100 | 12 |
| MW81-1-2 | - | - | 0 | - | 100 | 11 | - | 100 | 4 | - | 100 | 12 |
| 3 | 50 | 50 | 2 | - | 100 | 8 | - | 100 | 8 | - | 100 | 5 |
| 14 | 75 | 25 | 12 | 33 | 67 | 6 | - | 100 | 3 | - | 100 | 1 |
| 15 | 5 | 95 | 43 | - | 100 | 5 | - | 100 | 2 | - | 100 | 4 |
| 16 | 71 | 29 | 49 | 28 | 72 | 7 | - | 100 | 1 | - | 100 | 0 |
| 17 | 19 | 81 | 16 | - | 100 | 5 | - | 100 | 2 | - | 100 | 0 |
| 18 | - | 100 | 2 | - | 100 | 12 | - | 100 | 15 | - | 100 | 12 |
| 20 | - | 100 | 1 | - | 100 | 32 | - | 100 | 22 | - | 100 | 14 |
| 27 | - | 100 | 1 | - | 100 | 1 | - | 100 | 1 | - | 100 | 6 |

Appendix Table 8 (cont'd)

| Age: | 2 | | | 3 | | | 4 | | | 5 and older | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Percent | | Total | Percent | | Total | Percent | | Total | Percent | | Total |
| Maturity[a]: | 1-2 | 3-8 | no. | 1-2 | 3-8 | no. | 1-2 | 3-8 | no. | 1-2 | 3-8 | no. |
| HB81-1-9 | - | 100 | 8 | 2 | 98 | 50 | - | 100 | 11 | - | 100 | 5 |
| 10 | 16 | 84 | 31 | - | 100 | 21 | - | 100 | 6 | - | 100 | 6 |
| 12 | - | - | 0 | - | 100 | 5 | - | 100 | 3 | - | 100 | 2 |
| 15 | - | 100 | 2 | - | 100 | 28 | - | 100 | 10 | - | 100 | 5 |
| 16 | - | 100 | 5 | - | 100 | 16 | - | 100 | 5 | - | 100 | 1 |
| Average[b]/total | 35 | 65 | 301 | 1 | 99 | 524 | +[c] | 100 | 285 | 0 | 100 | 214 |

[a]Maturity stage descriptions, Appendix Table 10.
[b]Based on total numbers converted to percentage, not average of sample percent-ages.
[c]+ - represents less than 0.5%.

Appendix Table 9. Size composition of immature and mature herring (Clupea harengus pallasi) at age off the southwest coast of Vancouver Island, March 9-27, 1981.

| Length (mm) | Immature stages 1-2 | | | Mature stages 3-8 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Age 2 | Age 3 | Age 4 | Age 2 | Age 3 | Age 4 | Age 5 | Age 6 | Age 7 | Age 8 | Age 9 |
| 132-134 | 5 | - | - | - | - | - | - | - | - | - | - |
| 135-137 | 3 | - | - | - | - | - | - | - | - | - | - |
| 138-140 | 6 | - | - | - | - | - | - | - | - | - | - |
| 141-143 | 16 | 1 | - | 3 | - | - | - | - | - | - | - |
| 144-146 | 9 | 0 | - | 11 | 1 | - | - | - | - | - | - |
| 147-149 | 15 | 0 | - | 17 | 1 | - | - | - | - | - | - |
| 150-152 | 17 | 1 | - | 31 | 2 | - | - | - | - | - | - |
| 153-155 | 10 | 1 | - | 17 | 3 | - | - | - | - | - | - |
| 156-158 | 8 | 0 | - | 24 | 3 | - | - | - | - | - | - |
| 159-161 | 7 | 1 | - | 34 | 6 | - | - | - | - | - | - |
| 162-164 | 4 | 1 | - | 27 | 5 | - | - | - | - | - | - |
| 165-167 | 1 | 0 | - | 15 | 10 | - | - | - | - | - | - |
| 168-170 | 1 | 0 | - | 13 | 13 | - | - | - | - | - | - |
| 171-173 | 2 | 1 | - | 3 | 36 | 1 | - | - | - | - | - |
| 174-176 | - | 0 | - | 1 | 43 | 1 | - | - | - | - | - |
| 177-179 | - | 1 | 1 | 1 | 51 | 2 | - | - | - | - | - |
| 180-182 | - | - | - | - | 66 | 4 | - | - | - | - | - |
| 183-185 | - | - | - | - | 65 | 11 | - | - | - | - | - |
| 186-188 | - | - | - | - | 45 | 7 | 2 | - | - | - | - |
| 189-191 | - | - | - | - | 76 | 30 | 1 | 1 | - | - | - |
| 192-194 | - | - | - | - | 38 | 39 | 0 | 0 | - | - | - |
| 195-197 | - | - | - | - | 31 | 37 | 4 | 1 | - | - | - |
| 198-200 | - | - | - | - | 12 | 35 | 4 | 1 | - | - | - |
| 201-203 | - | - | - | - | 5 | 29 | 7 | 2 | 1 | - | - |
| 204-206 | - | - | - | - | 3 | 21 | 9 | 2 | 1 | - | - |
| 207-209 | - | - | - | - | 2 | 23 | 6 | 6 | 0 | - | - |
| 210-212 | - | - | - | - | - | 22 | 6 | 4 | 1 | - | - |
| 213-215 | - | - | - | - | - | 10 | 14 | 5 | 0 | 2 | 1 |
| 216-218 | - | - | - | - | - | 6 | 11 | 3 | 3 | 0 | 0 |
| 219-221 | - | - | - | - | - | 5 | 17 | 4 | 2 | 0 | 0 |
| 222-224 | - | - | - | - | - | 0 | 9 | 5 | 1 | 0 | 0 |
| 225-227 | - | - | - | - | - | 1 | 7 | 14 | 2 | 1 | 0 |
| 228-230 | - | - | - | - | - | - | 5 | 7 | 3 | 0 | 0 |
| 231-233 | - | - | - | - | - | - | 2 | 2 | 2 | 1 | 2 |
| 234-236 | - | - | - | - | - | - | 2 | 11 | 4 | 1 | 0 |
| 237-239 | - | - | - | - | - | - | - | 1 | 1 | 0 | 0 |
| 240-242 | - | - | - | - | - | - | - | 2 | 1 | 0 | 1 |
| 243-245 | - | - | - | - | - | - | - | 1 | 1 | 0 | - |
| 246-248 | - | - | - | - | - | - | - | - | 3 | 0 | - |
| 249-251 | - | - | - | - | - | - | - | - | - | 1 | - |
| Total | 104 | 7 | 1 | 197 | 517 | 284 | 106 | 72 | 26 | 6 | 4 |

Appendix Table 10. Maturity stages for Pacific herring sampled at the Pacific Biological Station. The descriptions of each stage are dapted from criteria developed for Atlantic herring (Bowers and Holliday 1961; Parrish and Saville 1965) and modified to suit the unique characteristics of Pacific herring which are exclusively winter-spring spawners.

| Stage | Maturity | Gonad appearance | Description | Timing |
|---|---|---|---|---|
| I | Undeveloped | Thread-shaped | Virgin herring with small gonads, less than 2 mm broad. Accurate macroscopic determination of sex not usually possible. | Year-round for young herring, usually less than 150 mm in standard length. |
| II | Starting | Ribbon-shaped | Gonads increased in breadth to 3-5 mm. Sex determination possible. Testes reddish-grey coloured and knife-shaped; ovaries reddish-wine coloured and rounder. (The gonads of virgins and some repeat spawners cannot be distinguished macroscopically.) | Late spring and early summer. |
| III | Developing | Tube-like | Gonads thickened, increased in breadth (5-15 mm) and elongated, but not extending full length of body cavity. Ovaries red to reddish-orange with granular appearance; testes reddish-grey with smooth texture. | Late summer and early fall. |
| IV | Maturing | Prominent | Gonads extend full length of body cavity. Ovaries reddish-orange to yellow; eggs distinguishable, opaque, variable in size and separable. Testes mostly grey; and will ooze sperm if sliced with a knife. Blood vessels clearly visible in the ovary and testes walls. | Late fall and early winter |

Appendix Table 10 (cont'd)

| Stage | Maturity | Gonad appearance | Description | Timing |
|---|---|---|---|---|
| V | Mature | Bulging | No blood vessels visible in gonad walls. Ovaries gold-yellow; eggs mostly transparent and uniform in size. Eggs can be exuded from the ovary under pressure and are adhesive on contact. Testes milk-white; sperm will flow under pressure. | Early winter for males, late winter for females. |
| VI | Ripe | Running | Eggs transparent. Eggs and sperm flow easily without external pressure. | A few days prior to spawning (usually in late winter or early spring). |
| VII | Spent | Baggy | Gonads slack. Ovaries may contain a few residual eggs. Testes limp and bloodshot. | Early spring for the first few weeks following spawning. |
| VIII | Recovering | Compressed | Gonads wine-coloured and usually longer and thicker than in Stage II. Blood vessels prominent. (This stage passes into Stage III, but may resemble Stage II in the process.) | Late spring and early summer. |

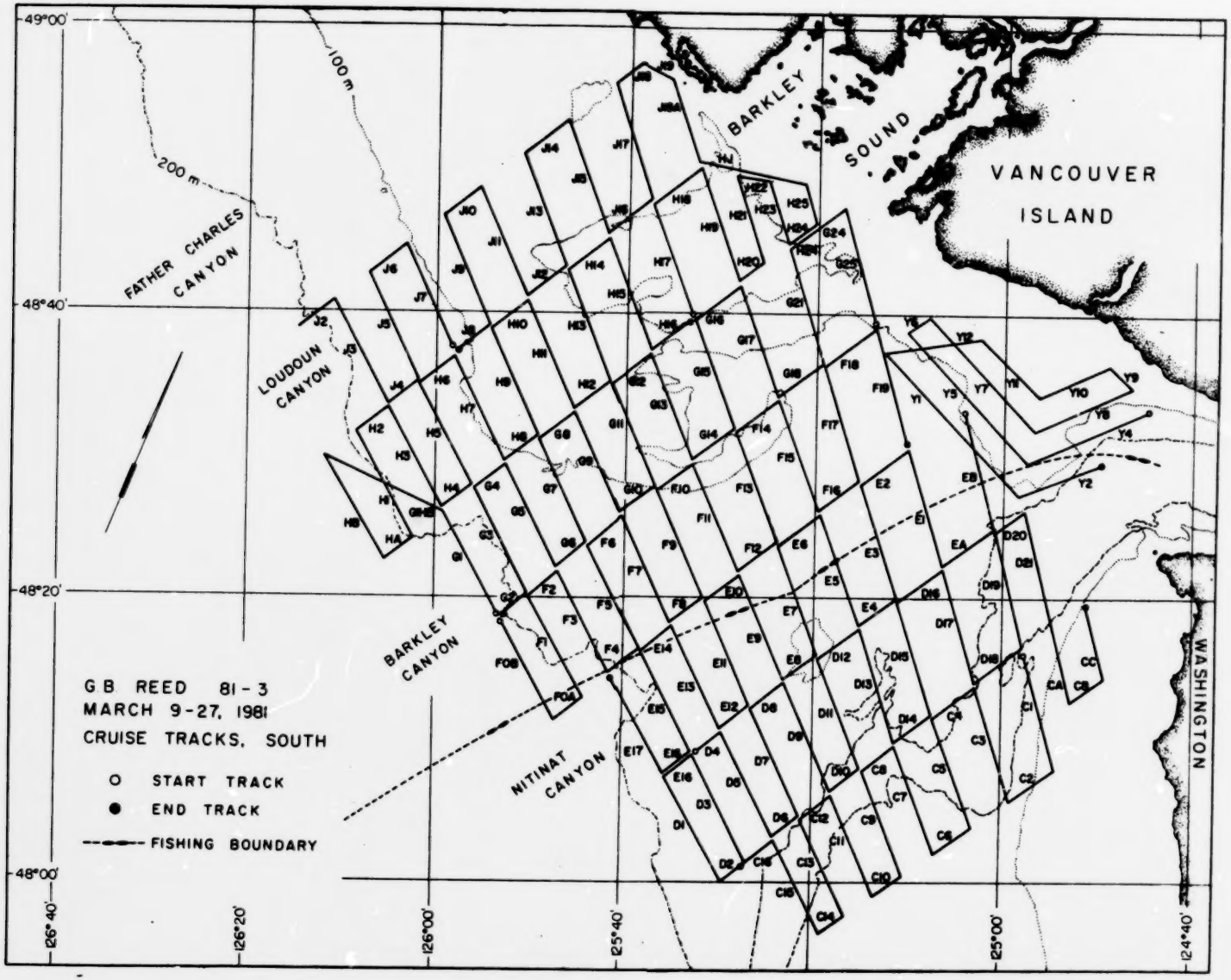


**Fig. 1. Cruise tracks for cruise G.B. REED 81-3, March 9-27, 1981, Southwest coast Vancouver Island.**

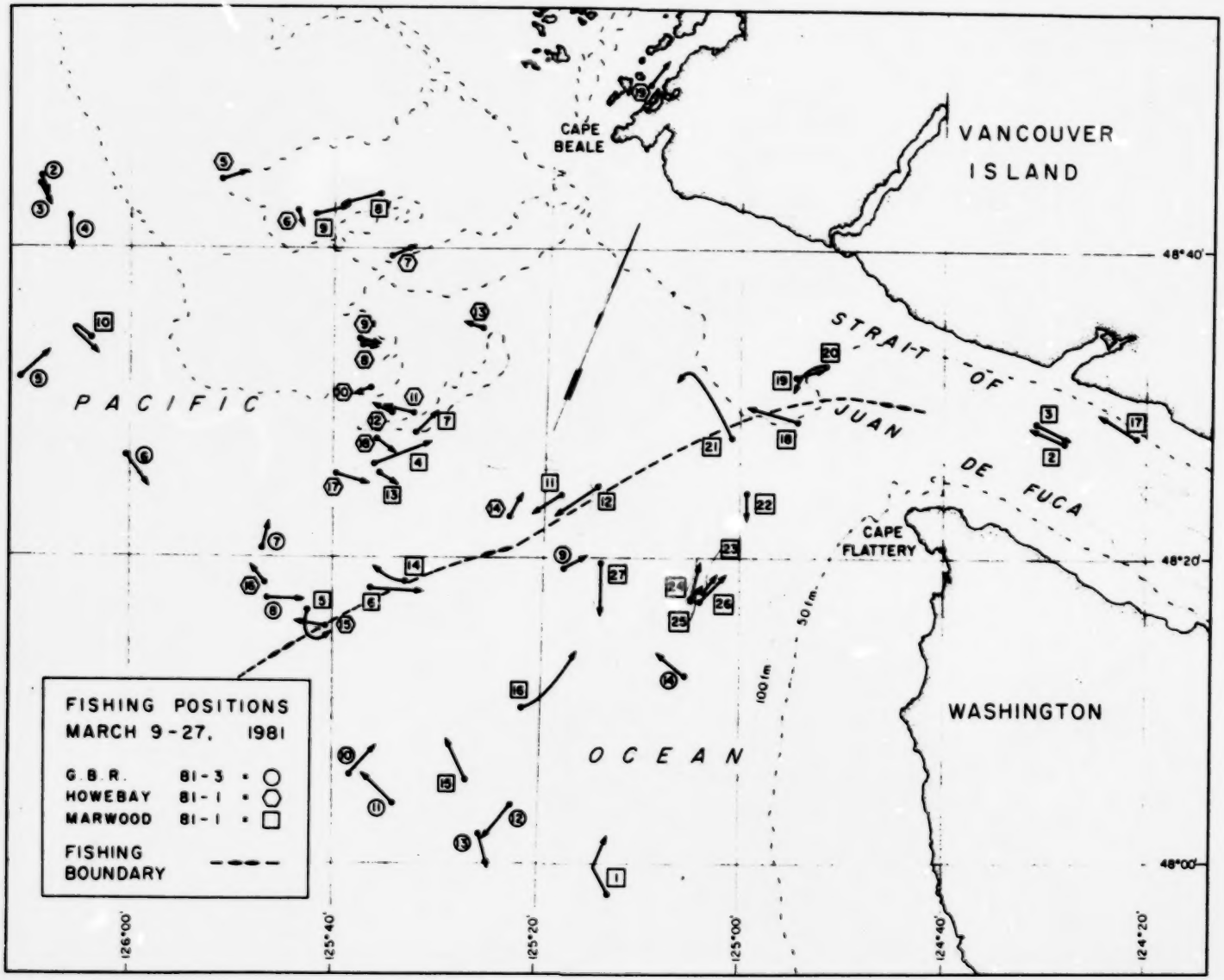


**Fig. 2. Location of midwater trawl tows for G.B. REED 81-3, M/V HOWE BAY, 81-1 and M/V MARWOOD 81-1, March 9-27, 1981.**

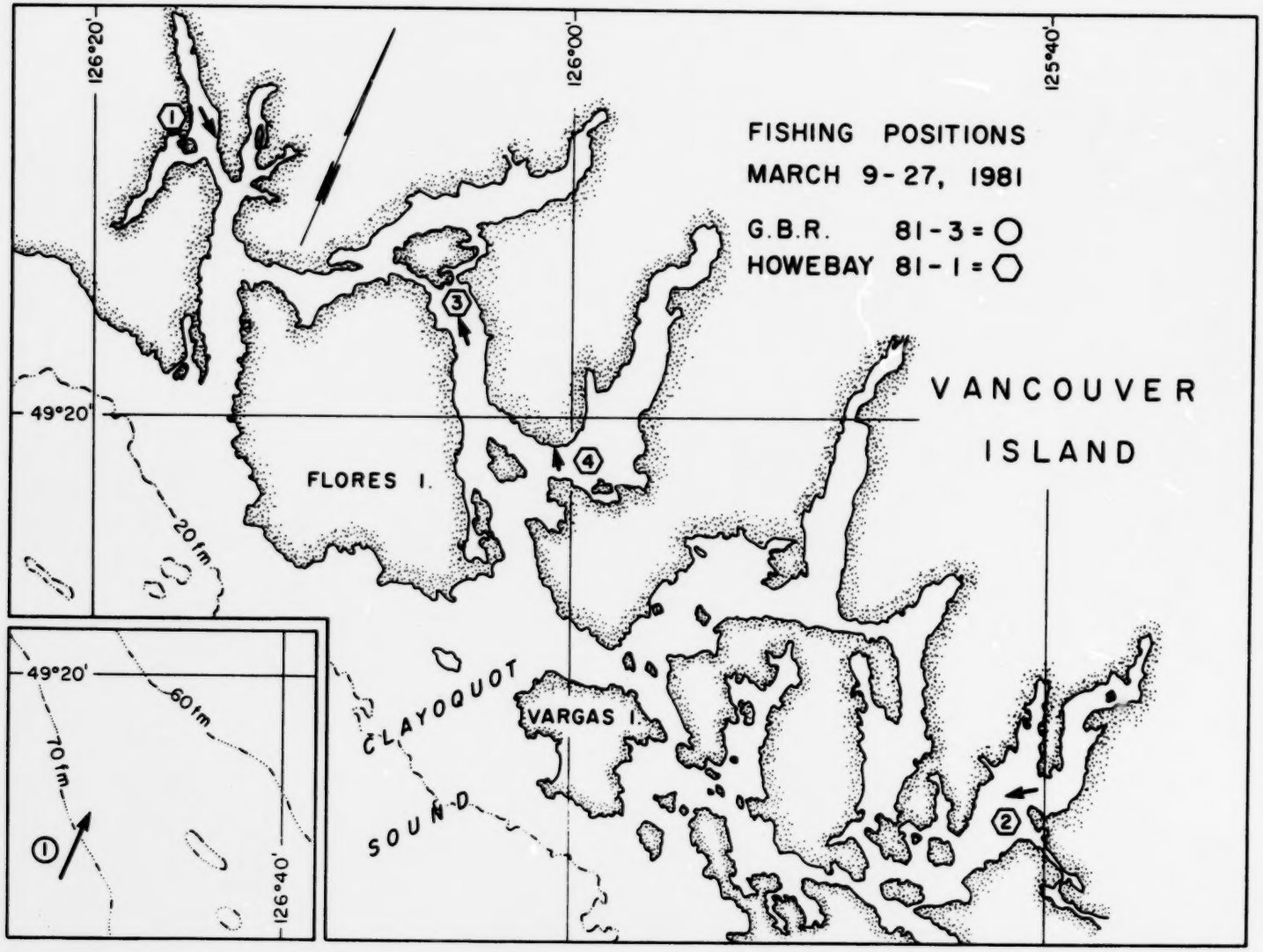


Fig. 3. Location of midwater trawl tows for G.B. REED 81-3 and M/V HOWE BAY 81-1, March 9-27, 1981.